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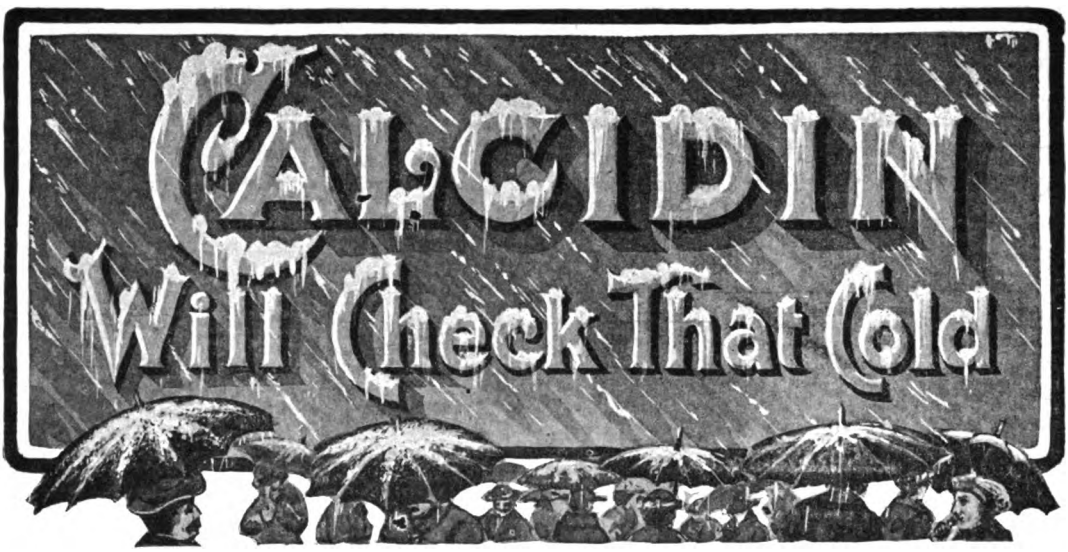

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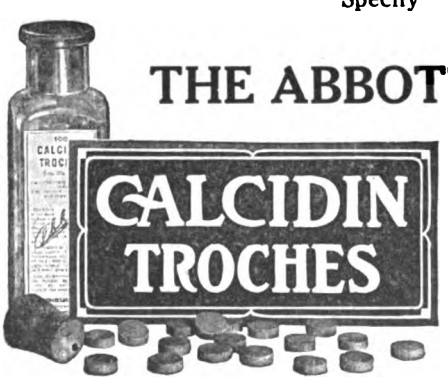

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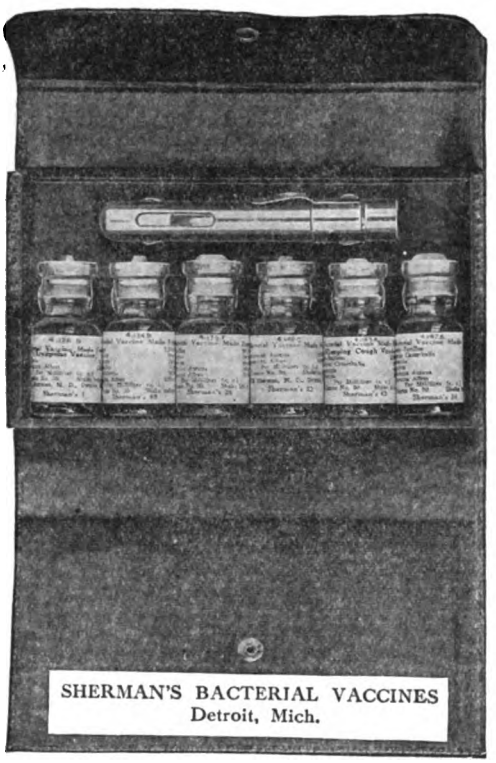

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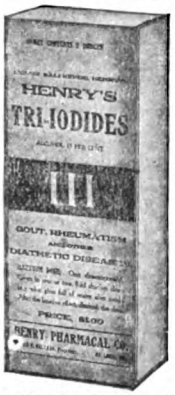

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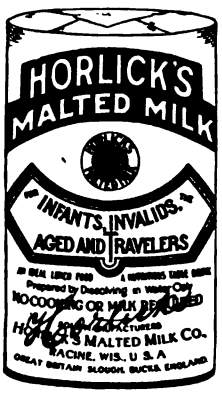

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Western Medical Times

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The Unconscious.

H. LAVESON, M.D.,
New York City.

DEFINITION OF TERMS.

It is that portion of the psyche which has been built up and organized in the process of development and upon which reality plays in the form of new and hitherto unreacted to situations, and in the friction resulting strikes forth the spark of consciousness. It also includes conscious states that we are not aware of, simply because not in the focus of attention, but in the fringe of the content of consciousness. The pathologically split off and independently acting conscious ideas or systems of ideas such as occur in hysteria and in automatic writings. Though the term "unconscious" is in general use, it has so many connotations derived from its various meanings, in metaphysics, psychology and physiology, that its use has given rise to considerable confusion of thought, particularly in the interpretation of specific psycho-physiological phenomena. Nevertheless, it has been so well established in our nomenclature that we could not replace it, if we would. Nor is it wholly desirable to do so. It is a good and useful term, but I believe that with each advance in the precision of our knowledge we ought, so far as accumulative data permit, to give precision to the concept for which it stands. Some do not like to define the term, not being quite willing to commit themselves unreservedly to the complete acceptance of the physiological theory of memory and to cut adrift from the metaphysical concept of a subliminal mind. The term, unconscious, is an appropriate and descriptive term to characterise that which is devoid of the attributes of consciousness.

The co-conscious includes those ideas or components of ideas—elements of thought—of which we are only dimly aware. It is a sort of twilight zone in which the contents are so slightly illuminated by awareness as to be scarcely recognizable. It must not be thought that because we are only dimly aware of the contents of this twilight zone therefore the individual elements lack definiteness and positive reality. Some of these marginal elements may be so distinctly within the field of awareness that we are conscious of them, but dimly so. Others, in particular cases at least, may be so far outside and hidden in the twilight obscurity that the subject is not even dimly aware of them. This group of ideas have the characteristic that they are all of the same value for consciousness. One group might as well be conscious as the other and whether this or that group is conscious depends upon their intensity, the focus of attention, etc. This is the state of affairs in the "secondary states" which always lie relatively near the surface, that is, can with comparative ease be made conscious. Those ideas which are out of the focus of attention, but which are capable of voluntary recall, are said to be co-conscious or in the co-consciousness. The content of the co-conscious is also unconsciousness if we use that term solely in its etimological sense. The multiplication which everyone knows, but does not know that he knows until his attention is focused on that knowledge, was unconscious, that is not conscious, and furthermore we cannot say how such knowledge exists in our minds when it is not illuminated

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by attention. The only adequate reason we have for saying that it exists in the form of ideas is that we always find it in that form when we come to consciously think of it. The difference between the co-conscious and the unconscious is therefore from this point of view, only that the material of the co-conscious is accessible. It is relatively easy to bring it to consciousness, there are no material resistances to its becoming conscious, and furthermore it is relatively accessible to the individual himself. The unconscious, on the other hand, is inaccessible alike to the patients and to others and any attempt to get at its content is met by more or less strong resistances. When we find the unconscious material, we are no more able to say, than in the case of the co-conscious, that it has been existing in the form of ideas. We only know by the method of interpretation. Certain conduct can only reach its explanation by assuming that such and such material—ideas—account for it.

A still more radical difference between the co-conscious and unconscious, than that of accessibility, is the difference in the character of the ideas that make their way finally into the consciousness from these two regions. The ideas of the co-conscious, when they become conscious, are perfectly familiar. The multiplication table is the same old multiplication table we have always known. The ideas, however, that emerge from the region of the unconscious are not recognized. They not infrequently come with a distinct feeling of strangeness, of not-at-homeness. They have distinctly the character of invaders, of being in a strange, uncongenial environment. Their meaning, their value, is not given. If analyzed, they will be found to have meanings altogether different from what they appear to have. They are highly symbolic. The understanding of this symbolism is at the basis of the understanding of the nature of the unconscious. The co-conscious is only that part of consciousness which, for the time being, is out of the focus of attention. It is a part of the present of consciousness, that is, the matter now being dealt with. As soon as this material of the now of consciousness is put into the past by being used as material in our growth, as soon as it takes its place in the path of our development by affording a resting place for further superstructures, then it enters into our historical past and as it recedes in the path of progress it partakes more and more of the nature of unconsciousness.

A subconscious process may be provisionally defined as one of which the personality is unaware, which, therefore, is outside the personal conscious, and which is a factor in the determination of conscious and bodily phenomena, or produces effects analogous to those which might be directly or indirectly induced by consciousness. It is a condition where complexes of subconscious processes have been constellated into a personal system, manifesting a secondary system of self-consciousness, endowed with volition, intelligence, etc. Such a subsconscious personality is capable of communicating with the experimenter and describing its own mental processes. It can, after repression of the primary personality, become the sole personality for the time being, and then remember its previous subconscious life, as we all remember our past conscious life, and can give full and explicit information regarding the nature of the subconscious process. By making use of the testimony of a subconscious personality and its various manifestations, we can not only establish the actuality of subconscious processes and their intrinsic nature in these conditions, but by prearrangement with this personality predetermine any particular process we desire, and study the modes in which it influences conscious thought and conduct. For instance, we can prescribe a conflict between a subconscious wish and a conscious wish, or volition, and observe the resultant mental and physical behavior, which may be inhibition of thought, hallucinations, amnesia, motor phenomena, etc. Our examination of subconscious processes permits the following general conclusions: First, there is positive evidence to show that in some instances, in their intrinsic na-

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ture, they are co-conscious. In other instances, in the absence of such evidence, it is permissable to regard them as unconscious. Second, that in the quality of the functions performed, they frequently exhibit that which is characteristic of intelligence. The conceptive facts may then be thus classified:

- The Subconscious
  - The Co-Conscious — Synonym: Subconscious Ideas.
  - The Unconscious
    - a: Conserved dormant neurograms or neural dispositions.
    - b: Active functioning neurograms or neural processes. (Synonym: Unconscious processes.)

The theories of the Unconscious.—Since the time of Leibnitz, theories of the unconscious have been reached from three different points of view; from the metaphysical, from the standpoint of normal psychology and from the point of view of those who deal, for the most part, with abnormal phenomena. With the first of these, the metaphysical, culminating in the erection of the unconscious into an absolute principle, comprehending both the organic and the inorganic worlds, we are not here concerned; our interest is rather in the theories propounded by the last two groups.

First, the question of the unconscious as it has appeared to the psychologist.

Herbart, basing his psychology on the conflict of concepts, considered that concepts below the threshold of consciousness are kept out of the conscious field because of the inhibitive influence of other concepts. In the unconscious they retain form and structure, and, on the removal of the inhibitions, arise once more into consciousness. The submergence and return of the concepts is dependent on a mathematical series of relations. While the concepts never suffice to inhibit each other completely, a group of two or more may submerge a single antagonistic concept. This play of concepts in a mind, which is devoid of all innate principles save a striving for its self-preservation, is the nodal point of the Herbatian psychology.

Carpenter concluded that changes of which we are unconscious, but of whose results we may subsequently become conscious, may go on under the threshhold of consciousness. For purposes of consciousness, he prefers to express this "unconscious cerebration" in physiological terms, as a function of the nervous system. He sees in phenomena, like the spontaneous occurrence of names vainly sought for, the finding of mislaid objects and spiritualistic phenomena.

William Allan White supposes the region of the unconscious to be built up of two distinct layers, and that he would explain all the facts of unconscious action as due to the interaction of these layers. The upper layer is a sort of vestibule to consciousness. When, for example, we try in vain to recall a name, and later find it coming of itself into consciousness, White would explain the case as follows: The train of conscious activity set up by the effort has, as soon as attention was turned away from it, sunk below the threshold of consciousness. But it does not at once die away. The activity goes on exactly as though it were in consciousness, now associate connections are made, and by the associative train succeeds in reaching the name of which we were searching. This now appears in consciousness, seemingly out of all associative connection, and yet a train of association has led to its discovery, only it was a train of unconscious association. So during the day we break off scores of trains of thought without carrying them to a conclusion, because they are too trivial, too complex, too unwelcome, to occupy the mind further. Such trains of thought

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drop below the threshold and there may form new associative connections. If these are strong enough, they may again appear above the threshold, apparently without cause. If such connections are not formed readily, the activity may die out without effect. Or such a train of thought may form still other associations and sink to lower depths of the soul. still to be considered. This upper layer of the unconscious, then, which we find in White's theory, is very like the usual sense in which the word "unconscious" is used, especially by those who would see something mental in its activities.

According to White, the lowest level of the unconscious is made up of cast off complexes, each with its own complement of energy. All the unethical acts and unsocial ways of thought of the child, repugnant to us today, still exist in the lowest dark chamber of the soul, not strong enough to break out into action, but alive. We may not allow this part expression; we may not even be conscious that it longer exists and yet it lives and works below the threshold.

Myers considers that there is an actual subconscious self "subliminal," possessed of sensations, thought and emotions. which possesses all the characteristics of conscious processes and in addition is wiser, broader, on a higher level, making visible a "longer spectrum," so that by its means is brought into consciousness material from a vast reservoir of universal energy. In conformity with this view he explains dreams and abnormal manifestations.

Munsterberg, pointing out that the subconscious is not a fact, but an hypothesis, sees in all facts, normal and abnormal, adduced to support the hypothesis, the same mechanism which underlies the ordinary processes of memory, attention, etc.; it is not psychical at all, but a physiological brain process. Its activity may be purposive, that is, adapted to needs of the individual, for it is alone on the physical side that the principle of casuality rules: "There is only an indirect causal explanation of psychical phenomena posible in so far as they can be conceived as accompaniments of physiological process." "Consciousness is nothing but the logical relation of its contents," "the psychical phenomena are in consciousness as the physical phenomena are in nature," nor psychical outside of consciousness. Alternating personalities are abnormal groupings of psychical experiences, to be explained in terms of increased or decreased inhibition.

Jastrow considers that "the activity of the mind and with it, the scope of psychology, is broader than the account of it obtained from the direct perception of consciousness." But both conscious and subconscious participate with distinctive functions in a common form of mental activity. There is no independent subconscious self. The subconscious he uses both in the sense of the marginal phenomena usually cited and to include activities inferred from their results; the perception of depth, the direction of sound, illusions, dreams, abnormal phenomena, and the like. Any attempt to explain the subconscious he considers shall begin with the normal and proceed to the abnormal.

Janet bases his conception of hysteria on the "splitting of consciousness," and the consequent subconscious functioning of groups of ideas or motor series which have become detached from the self. This subconscious is for him a term for a "disease of the personality," which probably, however, has its germ in normal individuals. It is, then, with him, merely a clinical term, but subconscious processes, when they do exist, are so complex and organized that we must suppose that its activity is both physical and psychical.

Sidis sees in the subconscious a second personality, manifesting itself in the phenomena of hypnotism, secondary personality, insanity and hysteria. This subconscious self is uncritical, its suggestibility varies directly as the directness of the suggestion made to it, instead of inversely, as is the case with conscious self. Diseases of the personality are to be explained by disaggregation of the neurone, with accompanying psychic loss of unity, and a suggestibility increasing pari passu. The

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functioning of the subconscious is also seen in social phenomena, and its social diseases in crazes and psychic epidemics.

Prince distinguishes the phenomena of dormant consciousness, including memories of past experiences, and the like, which are passive, from co-conscious ideas, which function in all respects like conscious once, except that the subject is not aware of them. The former he prefers to think of in exclusively physiological terms, proceeding from the standpoint that memory is at bottom a physiological phenomenon. Ideas which make up experiences tend to become organized into a "complex," so that if part of the experience is recalled, the whole tends to be. These complexes may relate to subject, to mood, or may be formed by temporal relations. Such complexes play a great role in psychoses. The welding together of ideas into complexes is founded on physiological neuron conditions, emotive tone is an especially strong factor in this welding. Complexes may be retained even though beyond the voluntary control of the subject, but under such conditions may manifest themselves in co-conscious activity. The phenomena are here too complex and well co-ordinated to admit of a merely physiological explanation. Co-conscious activity is possible in a temporary way even when there is no formation of complexes, as in the case of perceptions which are not noticed. Complexes may "split," are it were; the emotional tone passing over to a few elements of the original complex, while the rest drop out. Many examples, both normal and abnormal, are cited in support of this interpretation.

Bleuler revises the usual facts for supposing the existence of an unconscious stratum in the soul, and concludes that sensations, ideas, thought processes, impulses, even attention, may be unconcious. In fact, for him, unconsciousness of a process is the usual thing, consciousness is merely accessory. Ideas become conscious by becoming associated with the "ego-complex," but suffer no other change. Complexes in the unconscious may function in every way like the ego-complex, except that the subject is not aware of their activities. These unconscious activities really dominate our logical thinking, through their affective tone. It is not the intensity of sensations or processes, but the condition of the ego-complex, that determines the becoming conscious of an activity. Changes in the ego-complex, therefore, bring quite different functions into the focus, as is seen in states of revery, dreams, and abnormal phenomena. The conscious is thus explained in terms of the unconscious.

Freud's acount of the mechanism of the unconscious is found mainly in the last section of his "Traumdeuting." For him the unconscious includes three sorts of phenomena; (a) the traces left behind by past experiences (dormant consciousnes in the sense of Prince), which are for the moment out of mind, but are capable of voluntary recall; (b) processes which are in function and in all respects like conscious processes, except that the subject is not aware of them; (c) complexes which have so far sunk as to be incapable of presentation at will to consciousness. A brief consideration of the Freudian point of view in the abnormal field will show the working of the mechanism in question.

The psychoneuroses furnish us good illustrations of the struggle between co-consciousness and unconsciousness and the resulting changes in complexes which are presented to consciousness. Freud would make such diseases due entirely to the activity of the sex impulses of the infantile kind. Experiences in later life may occur which permit being brought into association with these early childhood impulses and raised to a higher power by their energy. These experiences being for the most part of an unpleasant or shameful nature, the patient attempts to repress. Since they are associated with early sex activity, it will depend entirely on how much energy these latter, which still exist in the unconscious, still possess, whether the repression is successful. If much of the energy of the infantile sex life has been sublimated, the later experiences cannot have their affective tone supply sufficiently strength-

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ened to cause any injury. But if sublimation has been less successful, and the infantile complexes are still possessed of abundant energy, the unconscious complex and the banal experience are in condition to form a strong union which the co-conscious strives to inhibit. If this inhibition is not entirely successful we get the symptoms of a neurosis, whose cause is thus always from childhood, while its occasion may be an event in later life. From this point of view it is that we may speak of a neurosis as a "regression" to the expression of an earlier form of sexual activity. But one thing further —the regressive forces are still so strong that the old impulses and the newer situations, even in their unholy alliance, cannot come to consciousness as such, but are obliged to make use of what seem illogical and indirect modes of presentation, so that the neurotic symptom is in a sense a compromise between two tendencies: that of expression and that of inhibition.

Freud has attempted to show that we find in dreams the same struggle between the opposing systems, with the same compromises which we have described above. Freud finds that the apparently trivial nature of the material in the dream is but a cloak for deeply significant processes. The dream never says what it means, at the bottom of the dream there is in every case an unconscious complex striving to make itself felt. But the inhibition of the psychic censor is too strong for the complex to break through. As a result the co-conscious system is driven to concentrate its energy on ideas which seem relatively harmless, but which really symbolize the complex. The dream is an expression of the craving of the unconscious or, in other words, it represents the ideal fulfillment of a wish. The first set of pictures making up the dream is called the manifest content of the dream. The new set of pictures, to carry out this pictorial metaphor, which is arrived at by means of the dream analysis, is called the latent content. It is the latent content which is clearly significant of our unconscious trends. The manifest content of the dream has been produced by four main processes which are called condensation, displacement, dramatisation and secondary elaboration. The process of condensation implies that each element of the dream is like the composite photographs which are made by exposing the plate or film to a number of persons and getting a combination photograph in which all the similarities are emphasized and the differences more faintly registered. The second change mentioned, as characterizing the transition from the latent to the manifest content of the dream, is the displacement. This results in a change, such that some circumstances, which in real life are considered of the greatest importance, are, in the dream, given a minor part to play, while things that, in our working life, are thought of as the merest trivialities are given the most prominent place. The result of this, as may well be seen, is to turn the values of ordinary life quite upside down, and necessarily gives many dreams the appearance of being the purest nonsense.

After recognizing in the dream the latent content which has been made out of the dream thoughts that constituted the latent content, and seeing how the manifest content, or the dream as it appears to us when we remember it upon awaking, has been formed by the condensation and displacement, we are now obliged to consider a third factor in the process of dream formation, a process to which has been given the name of secondary elaboration.

Freud regards the secondary elaboration as a contribution made by the waking thought to the formation of the dream, and that the censor is regularly a sharer in the work of the dream formation. The result of this co-operation of the conscious in the making of the dream is to change the dream in the direction of a more rational occurrence, more like the experiences of waking life than it would be otherwise. The secondary elaboration therefore is effected largely in accordance with the laws which govern the familiar process of day dreaming, or reverie. A careful examination of the elements of the dream sometimes leaves us in considerable doubt as to whether the elements

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of the dream, or at least some of them, are not entirely supplied directly from the conscious life from this very source of day dreams, so that it is said of some dreams that they have first been dreamed in the day time and have been brought to fuller consciousness in the dreams of the night.

An important consideration in the study of dreams is the fact that the material at the disposal of the unconscious for making the dream is primarily visual. We rarely dream except in pictures. We see things in dreams. Vision is sometimes a synonym for dream. Very infrequently do we dream words, and almost never do we dream smells or tastes. The primarily visual nature of the dream calls, then, for a characteristic of dream formation which has been called "regard for presentability" or "dramatization." The dream is the chief means by which we may penetrate deeply into the unconscious. Freud calls it the royal road to the unconscious.

The disguises under which the unconscious presents to our conscious lives the experiences that have been repressed on account of their painful qualities have been studied by psychoanalysis under the name of symbols. A symbol in the ordinary sense is merely an emblem, like the national flag, or a trade mark, which represents in the one case some sentiment, such as patriotism, and on the other hand, a certain standard of excellence in making of a kind of goods. But a symbol in the newer sense is an idea which takes the place of the ideas that have become too painful to be borne by the conscious life, and so to speak represents in consciousness the idea that is buried in the unconscious.

All our actions, even the unintentional ones which crop out as mistakes, errors and lapses of memory, have a common cause in the unconscious, and that they are an expression of the wish of the unconscious. Thus if one writes a letter and forgets to post it, there is a probability that there was in the unconscious a motive for not posting it. Possibly it contained a check in payment of a bill. Possibly the check was "inadvertently" left out, in which case the letter might be remembered and posted. If we "inadvertently" leave any of our belongings in the house of a friend, the supposition is that there is an unconscious wish to return soon, ostensibly for the purpose of removing the articles. If we blunder in shaking hands with a new acquaintance, the presumption is that our unconscious sees something in the person that it does not like, probably a resemblance to some person who has offended us. If we find difficulty in meeting an appointment on time, it is likely that we have at least an unconscious desire not to meet it at all.

THE VALUE OF THE UNCONSCIOUS.

We are all aware, when we think at all, how dependent we are upon the unconscious and the greater, the nobler, the more brilliant are our thoughts and qualities, the more it is obvious to ourselves that their origin lies beyond our ken. We continually hear voices within addressing us; we wish to do a certain thing, and are conscious of being opposed and hindered by some impulses from the unknown, or on the other hand we have no wish or desire to do a certain act, which nevertheless we feel impelled, by some hidden influence, to do. We consciously see, hear, taste, touch, smell; but every object so perceived is at once appreceived unconsciously; in other words, our whole enjoyment and understanding of the light or sound message is derived from the added information respecting it, at once given by the unconscious. Consciously we find ourselves endowed with tact, instinct, sense of the beautiful in art, in music, etc.; endowments that we all use and are grateful for, but use largely unconsciously, and of whose origin or dweling-place we are wholly unconscious. The value of the unconscious is enormous. It guides him aright when otherwise he would go wrong, it inspires him, it warns him, it furnishes him with names, facts, and scenes from the stores of memory. It is really not only the guiding power of the body; accomplishing tasks so intricate, that no conscious mind, even if it had the power, has the capacity for, but it also guides behind the scenes

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the direction of his thoughts, his tastes —in short, not only his physical, but his psychical life. The unconscious supplies every being in its instinct with what the body needs for self-preservation and for which its conscious thought does not suffice. The unconscious preserves the species through sexual and maternal love, ennobles it through selection in sexual love, and conducts the human race historically steadily to the goal of its greatest possible perfection. The unconscious often guides men in their actions by hints and feelings when they could not help themselves by conscious thought. The unconscious furthers the conscious process of thought by its inspirations in small as in great matters, and in mysticism guides mankind to the presentiment of higher, supersensible unities.

The unconscious wish is ever actively steering our behaviors for good or bad every hour of our waking lives and supplying us with the material for our dreams at night. It also helps, when rightly controlled, in solving our problems for us, as we frequently find that, though we may have given no conscious thought to certain questions, our minds are already made up on those points. The unconscious produces its effects in our mistakes of reading, writing and acting. It prevents the occurrence to the mind of whatever is emotionally toned in an unpleasant way. There stands in the way of the direct utterance of the literal wishes of the Unconscious a force called the psychic censor, representing the requirements of society, or that part of society in which we live, and that it succeeds in preventing the appearance of the craziest desires in our consciousness, but that these desires succeed in gaining access to the world of consciousness by virtue of being disguised and appearing as symbols. The symbols used by the unconscious for the purpose of gaining admittance to our conscious thoughts are of the most varied nature. In fact, there is no mental state, there is no physical expression of a mental state, that is not a symbol, from the way we address a meeting to the way we cut our finger nails and the color of neckties and other clothing that we wear. The symbol may be a turn of thought shown in the use of a bit of slang or a figure of speech, or it may be a hysteria or a phobia. The unconscious then is like the tail of a kite. While it drags down and holds back, it nevertheless steadies its flight and at once prevents it from dashing itself to pieces by a sudden dart downwards and makes it possible for it to reach greater heights. The unconscious, as our historical past, is the path by which we have come. It represents resistance overcome, dangers avoided.

511 East Eleventh Street.

The Value of the "No Good"—Alcohol versus Phenol.

FIFTY-FIRST PAPER

DOUGLAS H. STEWART, M.D., F.A.C.S.,
New York City.

A woman has died from phenol poisoning, a post mortem has been held, and much discussion has followed. "Everybody knows" that whiskey is one of the most popular antidotes under such a state of affairs, so that if given early and freely, as it was in this instance, no harm to the patient will ensue from the ingestion of the phenol; only this woman is dead. It follows that a most fertile field of investigation may perhaps be found in the critical examination of some of the very things that are classified as something that "everybody knows." Perhaps the most searching question in all the world is, "How do you know?" Everybody knows that the sun rises in the east and sets in the west, that it does not shine at night, and when a man falls everybody knows that he falls "down."

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Yet it is here humbly submitted that every one of these beliefs is inaccurate, though commonplace; so that should any one state that he knew a single one to be a fact, or if he were asked "How do you know?", his answer must be so wide of the mark or so foreign to the true state of affairs that his utter lack of exact knowledge would be the one thing most clearly demonstrated.

It must appear as though every author or lecturer who expresses himself to the effect that alcohol was antidotal to phenol could never have had any personal experience in the matter at all, but, parrot-like, was giving forth pure hearsay evidence.

In this matter let us endeavor to be as exact as possible; let us consult Stedman's Medical Dictionary, and in so doing we will discover the following definition on page 70 of that book. "Antidote (from *anti,* against; *dotos,* that which is given). An agent which neutralizes a poison or counteracts its effects. Chemical A. A substance which unites with a poison to form an innoxious compound. Mechanical A. A substance which prevents the absorption of poison. Physiological A. An agent which produces systemic effects contrary to those of a given poison." It is here submitted that alcohol does none of these things to phenol, but is a pure solvent, a menstruum, or a liquid which holds the phenol in solution. As a solvent it is superior to water; as a diluent the two are about on par.

If the question "How do you know?" were put to the present writer, his answer would be, because he had tried it out on himself, upon others, and is willing to abide by the reader's decision after the reader has come to a decision by that reader's actual trial; as distinguished from mere hearsay. Furthermore, he will endeavor to give directions for experiment so that anyone may follow them for himself in demonstrating the matter so conclusively, to his own satisfaction, that the assertion that alcohol is an antidote for phenol may not be made, save as an equivalent to the plain statement that the reader is too lazy to make the trial.

One Doctor asked the question: "How about your putting alcohol upon the stump of the appendix in your colon work? Does not that prevent the burning from the preceding phenol?" This is a fair question. Its answer is that phenol is no scar maker, and scar making is an important part of the technique. Dermatologists and others employ phenol in the removal of scars, because it is a mild superficial caustic; but also it is not a cicatrizant. In which latter fact lies one of its great advantages when it is used to burn off a scar, layer by layer, in successive applications. It never adds to the thickness of the original scar by adding secondary cicatrices, but acts in an exactly contrary manner. Whatever may be the other reasons for an unsatisfactory result ensuing from appendectomy, study of the condition appears to reveal that a good, heavy scar is one essential preliminary to the curative effort reaching a good terminus. Therefore that sort of scar is deliberately planned when the effort is initiated. It follows that whatever functions the appendix may have, one of those functions is to act as a sort of hitching post for the efforts of the tæniæ coli, so that when the appendix is removed it should have a substitute. Its place should be occupied by a firm, strong scar.

Contemplation and comparison of actinograms taken before appendectomy, but showing little or no colon trouble, with a good, tight ilio-cecal valve, and such pictures contrasted with actinograms taken years later, say those that are taken for the writer's guidance, would rather tend to reveal very plainly indeed that the best results are those that follow the use of the actual cautery, because of its consequent heavy burn-cicatrix. On the contrary, the poorest results follow some aseptic method, or they follow the simple application of phenol alone, with little to choose between the two plans. The phenol-alcohol is a ci-

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catrizant only secondary to the cautery in value. In short, alcohol is used upon an appendical stump by the present writer because he thinks it combines with the phenol to make a good scar, but it is not employed for any other reason whatever. His idea is plainly that dilation of the caput and leaky ilio-cecal valves are rendered less probable when a good scar supplies a good tænial hitching post, or point of pull. Perhaps every surgeon has not taken the pains necessary to come to the same conclusion, but any one of them who is at present using the actual cautery will cheerfully admit that he has no intention of abandoning the use of that rather cumbrous and troublesome apparatus, which latter he would do quickly enough if the results did not repay him. The same reasoning holds with phenol-alcohol. Its results are successful ones perhaps to a lesser extent than is true of the actual burn. But the actinograms make out the chances of good consequences or of final success to be decidedly better with phenol-alcohol than are the chances of earlier days when phenol alone was the popular application to an appendical stump.

The Pharmacist remarked, "But look at the suggestions in our list of poisons and antidotes. Every one of them suggests alcohol as an antidote for phenol. How about that?" All the lists that the Pharmacist could furnish at the moment were contained in Squibbs' Materia Medica and in Lilly's Hand-Book. So let us quote them. Squibb's Materia Medica states, on page 191, "Alcohol, or whiskey freely at once, then emetics." This is considered an equivalent to that statement that alcohol is an antidote, whereas it appears to the writer as a positive denial of antidotal powers. Does the sentence not mean, "Dissolve the phenol with alcohol and get the solution out quick." Surely the Squibbs can have small confidence in alcohol as an antidote. Lilly's Hand-Book, page 261: "Antidotes Phenol. Avoid the use of alcohol." Hardly any enthusiasm shown there.

Another Doctor remarked that his teacher was Cushny, and he would take Cushny's word before mine. He also said that Cushny considered alcohol as an antidote to phenol. The Doctor produced a copy of Cushny's Therapeutics and read aloud from page 404: "The corrosion induced by carbolic acid locally may be treated by washing the part with alcohol, which dissolves the acid readily. This treatment has been suggested for cases in which the poison has been swallowed, but it does not seem to prevent poisoning in animals." The Doctor to whom this had been submitted says that if I keep on I will convince him that the profession has not yet learned how to read attentively.

The corner Druggist says that he spilled phenol all over himself, but cleaned it off with a whole lot of alcohol. Knocked the neck of the stock bottle off so as to dash it on without delay. He was but little burned. So that proves that alcohol is an antidote, in his opinion.

Another Druggist states that he has a friend who is the foremost toxicologist in the world. He knows more about phenol than anybody. He will call his unnamed genius on the phone, and that great genius will silence the poor present writer for all time. The message that came over the phone was this: "If you tell anybody that I said that alcohol was an antidote for phenol I will come up there and bite your ear off. What I tried to get through your thick skull was that if you used alcohol in a case of phenol poisoning and did not at once follow it up with a half pint of camphorated oil, then the patient was a goner." Not much enthusiasm there, either.

A Curator says: "If whiskey is given, then the stomach is one burned, smeared surface. If not given, the effects of the phenol are more limited."

There was much more said and many other opinions, both grave and light in character; but these will suffice for the purposes of this paper. The lesson to be learned is that alcohol is a splendid solvent, but only that, pure and simple. Let

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the reader paint two spots upon his body. One area is to be coated with a mixture of equal parts of alcohol and phenol, but the other is to be swabbed with a mixture of equal parts of camphor and phenol. Let him on another occasion paint two areas with phenol and drop alcohol upon one of them. Then let him narrate his experiences just as he discovers them. Perhaps as brilliant experiment as any is to make a phenol burn the size of a fifty-cent piece, to drop alcohol upon it so that the drainage hits another part of the body. For instance, make the original burn on the left forearm, drop alcohol upon that so that the drainage in turn falls upon the left leg. The slower the dripping, within limits, the larger the leg burn.

There be those who imagine that tincture of iodine and phenol when mixed in equal parts will not burn because of the alcohol content. This is one of the nicest blistering fluids imaginable, and a blister has its uses—at times. One can but recommend the perusal of some of the literature upon burns and ulcers of the posterior fornix region of the vagina, as they are produced by the application of the aforesaid mixture to the cervix and as evidenced in the various clinics where women are examined.

Alcohol, being a solvent, may be made to dissolve phenol, after which solution the whole may be washed away through the generous application of more alcohol. If phenol is applied to a papilloma, it may act well, but if alcohol is put upon the phenol a very uncomfortable and uncircumscribed smear-burn may result. Such conditions are particularly common and bad about the labiæ vulvæ. (We can swear to this, for we once got ourselves most wonderfully disliked when treating a wart in this locality with phenol followed by alcohol. The result was a smear-burn more than half an inch in diameter. All of which so peeved the patient that she refused further treatment by us.—Ed. W. M. T.)

The mixture of phenol-alcohol in the human stomach will surely kill. Possibly the actual corrosion may be a little less deep because the phenol is diluted. But this is less important than it would appear, because the extent of damage accomplished by three ounces of a 30% solution is much more widespread than may be brought about by a single ounce of a 92% solution. If gangrene be under consideration, the most dreadful cases have followed the use of 2% and 4% solutions, so that it was formerly considered that phenol gangrene did not follow the use of solutions that were of corrosive strength.

Many of the older authorities taught that, owing to spasm, etc., it was rare indeed that enough phenol would reach the stomach to cause a dangerous burn, but evidently we have changed all that by giving whiskey and trying to make certain that the phenol is dissolved from pharynx and oesophagus and carried into the stomach.

It is at once admitted that alcohol put upon a phenol burn of the skin simply dissolves and washes away that phenol before the latter has time to act; but that is not at all the same thing as stating that the phenol tincture is inert or that the washing fluid is any or at all better than a 2% solution of Epsom Salts and Soda Carb. in plain water. That is another matter that any reader may readily determine for himself.

The point to be emphasized here is that "Solvent" and "Antidote" are not synonymous terms. Furthermore, a fatal issue to some patient may be forefended, at times, if the difference between the two terms is very clearly understood.

We are wondering what part of an anemic woman's anatomy the osteopaths find displaced.

We wonder how many men on the State Examining Board get there because of ability and how many through political influence. Maybe some governors should look a bit closer to their appointments, lest. at some future time, ridicule be heaped upon their heads.

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Pyosalpinx.

A Clinic at the Park Hospital, New York, May 15, 1920, by Robert T. Morris, M.D., New York.

While still in her teens this young woman, now twenty-seven years of age, had a curetting after an abortion. From time to time since then she has been aware of more or less pelvic disturbance, probably associated with insidious extension of the gonococcus into the uterus and its adnexa. Five days ago a violent peritonitis suddenly emerged from the pelvis and began to extend over the entire peritoneal cavity. Two days later she was moved to the hospital, hot douches and heat locally applied to the abdomen by her physician having failed to check the onset of peritonitis. In cases of ordinary congestion of the uterus, as this was probably assumed to be treatment with heat is effective but not when the gonococcus is starting out on a rampage. Upon her arrival at the hospital we found a rigid distended abdomen, very sensitive on pressure, shallow respiratory movements and a rapid pulse of the quality which belongs to peritonitis.

There is always some question if peritonitis is extending or if it is declining when we first see a patient of this sort. There is one test which we call "the peritonitis test" which is very accurate. Pressure is made upon the abdomen at any point with three fingers slowly until the patient begins to complain of pain. If sudden removal of the three fingers causes more pain than was caused by pressure the peritonitis is advancing and is to be treated from that point of view. If on the other hand sudden removal of the three fingers does not cause more pain than was caused by the downward pressure peritonitis has been checked and the case is ready for operation. We do not operate in pyosalpinx when the peritonitis is progressing. This belongs to judgment coming out of experience. The manipulation and shock belonging to operative work in the presence of advancing peritonitis in pyosalpinx leads to still more rapid extension of the infection.

How are we to stop advancing peritonitis and prepare the case for the operative stage? There is but one very successful way so far as I am aware. This way is so successful that the old time doctors who employed it were very slow to believe that operative work in appendicitis for example would give better results than were obtained by what was known as the Clark opium treatment. In the midst of progress we get into trouble, one of the troubles being due to forgetting what was once good. Sometimes I feel that I would rather know what I have forgotten than what I know at the present time. The Clark opium treatment in a case of this sort includes in addition the application of ice locally over the point of most intense septic activity. What is the philosophy of the opium treatment? Let us for a moment consider the factors involved in the problem before us. In advancing peritonitis there is pain, pain in high degree. This pain sends destructive impulses incessantly to the brain and cord centers of the patient, thereby lessening the ability of these centers to conduct processes of repair. Peritonitis means the destruction of endothelium and the liberation of protein poison and injurious enzymes. These add their destructive influence to that of pain. What does opium do? It lessens the degree of destructive impulse caused by pain. It lessens the peristaltic movements of the bowel which are spreading infection throughout the peritoneal cavity. How much opium are we to give? We are to give enough to carry the respirations of the patient down to twelve or fourteen to the minute. In the words of Dr. Clark, "Do not measure the opium, measure only the respirations." Patients with peritonitis will "devour" opium very much as patients with

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syphilis will "devour" iodides. We do not care anything about the respiration rate excepting as it stands for an index of the peristalsis rate. When the respiration rate is down to twelve or fourteen to the minute we know that peristalsis has nearly ceased. The best form of opium is perhaps powdered opium dropped upon the tongue and the amount will be anywhere from one to three grains per hour until the opium result which we are seeking is obtained. If the patient is vomiting or in such pain that opium does not readily make any impression we start off with a priming of a quarter or even one half grain of morphine and follow this with the opium powder or tincture of opium. Morphine is not a good resource for continued employment. Its effects are too sharply up and down. Opium is more moderately continuous in its action and that is what we want. In almost any case of advancing peritonitis a very few hours of opium and ice treatment will suffice for bringing the peritonitis under control. The respiration rate may sometimes be kept much lower than ten or twelve to the minute but here we enter a dangerous field requiring expert attention. In one case of typhoid peritonitis with perforation and hemorrhage that I know about the respiration rate was kept down to four for a number of hours and with successful outcome. This sort of thing must not be taught to undergraduate medical students however.

Last night on making the peritonitis test for this patient I found that quick removal of the fingers from the abdomen did not cause more pain than downward pressure caused and knew that our patient would be in condition for operation this morning.

I shall operate without gloves but with hands well prepared. The reason for that is because I shall have to work through a short incision guided by the sense of touch which allows of more rapid work than would be possible through a large incision if I were wearing gloves. This will avoid the need for Trendelenburg position, extensive use of retractors and of gauze pads, all of which introduce an unnecessary degree of shock. They did not belong to the technique of Tait or of Price whose statistics were the best of any abdominal operators in the world at the time when neither one of them had much faith in antiseptic precautions. Rubber gloves represent a distinct advance in surgery. They belong to standardized surgery but standardization has its limitations and gloves are not wanted here. In the first place it would be difficult to add much infection to that already present and in the second place fewer bacteria would be carried into the wound by well prepared hands than would fall into the wound from the air through a large incision. The patient's addomen has been prepared with iodine. This is removed with alcohol in advance of operation. A very necessary step. If iodine is left upon the skin in quantity any peritoneum with which it comes in contact is injured by the iodine. My incision is approximately three inches in length, very different from the incision that would be required if one were working with gloves. Immediately upon passing through the abdominal wall a large quantity of straw colored fluid escapes which is at first taken to be free peritoneal fluid but a moment later is recognized as urine from a greatly distended bladder. Through some oversight on the part of attendants the routine procedure of catheterization of the bladder was not attended to. Opening the bladder in this way will do no harm to the patient in all probability but it looks like bad surgery. Repair of the bladder wound is quickly made by infolding the cut margins with a Lembert suture of catgut. The Lembert form of suture for the bladder does not bring any peritoneal surfaces together. The idea is to avoid having any suture material on the inner surface of the bladder where it would serve as a foreign body and might collect calcareous salts in concretion form. If the patient is given urotropin afterward we need have little fear of cystitis or other complication. There is no danger of urinary fistula persisting if the catgut sutures should not hold because we cannot keep a urinary fistula open

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very long even when we try to do so. Opening the bladder by accident seldom occurs but sometimes does, and has not led to any dangerous complications so far as I have observed it. The distended bladder has now dropped down to its normal size, the thickened peritoneum is opened and free peritoneal fluid escapes.

The pelvis is filled with a mass in which the various structures are readily made out by means of a nice sense of touch but would be confusing if one were working by sight. The left tube is widely distended into a great pus sac which is ruptured in the course of separation of adhesions. This free flow of pus need cause us no anxiety and will not even interfere with primary union of the skin wound if we take little pains to remove it. The right tube also widely distended with pus is next shelled out and both ragged masses are stripped away in such a manner as to leave the ovaries hardly to be distinguished as such among the shreds of torn adhesions. It is very important to leave at least one ovary in pyosalpinx cases in order to preserve the menstrual function. If for any reason it becomes necessary to actually remove an ovary along with the ragged tube mass, the ovary should be cut away from the mass and tucked back into some niche made for it in a slit in the peritoneum. Here it will remain and continue to function. In order to have a look over the field from which adhesions have been separated I call for an abdominal gauze pad. The one which is handed to me is very hot. It would be destructive to endothelium. Hot gauze pads and iodine have done a great amount of damage to the peritoneum in the past and will cause more damage to the peritoneum in the future.

The operative work having been completed an iodoform gauze cigarette drain about as large as my forefinger is inserted to the bottom of the pelvis and allowed to emerge at the lower end of the wound. An external mass of loose gauze is then applied to be changed every half hour until oozing from adhesions ceases. After that it will need to be changed but once or twice a day and at the end of four or five days we shall begin to pull up the drain an inch or so daily until it is all out.

In the after-treatment of the case we shall give the Murphy drip by way of the rectum in order to restore lost fluids and maintain tension. The water of the Murphy drip will contain a little bi-carbonate of soda to overcome acidosis belonging to a case of this sort. If there is much distension of the bowel later in the day or tomorrow the alum enema will be the resource of first choice aided by pituitrin if desirable. The alum enema, however, ounce 1 of alum to a pint or a pint and a half of water, is the most effective resource with which I am familiar for "blowing out" a distended bowel in a case of this sort. The patient will be given very little opium after operation, just enough to quiet restlessness. Opium has one great disadvantage in setting at rest the protective resources of the individual at the same time that it lessens pain and inhibits peristalsis. We must keep this fact in mind. In a case of advancing peritonitis the greater good comes from not taking into consideration this injurious effect of opium. After the operation when the reconstructive forces supplied by the patient herself are to be depended upon we again remember the injurious effect of opium and place it upon the other side of the balance sheet.

The question of Fowler's position after operation is one which may be left to the nurse in attendance rather than to any arbitrary rule. The nurse will know what position gives her patient the greatest degree of comfort. For twenty-four hours after operation the patient will have nothing but hot water by mouth and then we may begin with lemon albumen or broth followed by soft diet and then full diet in accordance with progress in the case.

Note on date of making this report, five days after operation: The patient was kept on hot water for twenty-four hours liquid diet for two days after that with soft diet on the fourth day and regular diet on the fifth day. The wound has healed by primary union with the exception of the small drain

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opening even though very little pains was taken to remove pus from wound surfaces when suturing. The tremendous resistance called out by the patient in the presence of this kind of infection leads to speedy repair if we have not damaged the patient ourselves with elaborate painstaking detail in our operative work. The protective resources which have been called out in cases of this sort are so intense that the patient may go on regular diet five days after the operation while the surgeon if he pricked his finger with a needle at the time of operation might be dead in the same length of time. Remember this latter point. It is the keynote to our whole philosophy in the treatment of a case of this sort.

Between the time of sending the manuscript and correcting the proof the patient has returned to a condition of practically perfect health with two good ovaries and two good tubes still in her possession. This is not the history of pyosalpinx in the text books.

I forgot to note that vaccine treatment is employed in cases in which the gonococcus remains active in pyosalpinx.

The Phenomenon of Immunization.

G. H. SHERMAN, M.D.,
Detroit, Michigan.

That most diseases are caused by germs is now generally recognized and that recovery from disease is brought about by the production of an immunity is also well established. Naturally the changes that take place in the blood and tissue cells during this immunizing process have been carefully studied by animal experimentation and by the changes that take place in the blood serum of an animal which has been immunized to a given germ is more destructive to that germ than it formerly was shows that during the development of that immunity some substance or substances are formed which are inimical to the life of the germ. By clever means a number of these substances have been detected and to a certain extent measured. They are known as antitoxins, agglutinins, preciptins, lysins, opsonins, etc. Many theories have been advanced as to the source and nature of these substances. Of these the Ehrlich side chain theory has been the more popular. At the present time, however, the enzyme or ferment theory as worked out by Vaughan, Aberhalden and others, is receiving the most attention.

Life depends upon the production of enzymes because it is by means of the enzymes or ferments that food substances are prepared for absorption and assimilation. In the more highly developed forms of life, certain organs are set aside for this purpose. Single cell organisms or germs, on the other hand, are so constituted that all the functions of life are contained within the one cell. The single cell organism lives and grows by absorbing and assimilating substances with which it comes in contact. Where necessary the germ secretes enzymes for the purpose of preparing food so it can be absorbed and assimilated and these ferments often have a toxic or destructive influence on tissue cells when in contact with them.

Vaughn formulates the proposition thus: "When body cells find themselves in contact with, or permeated by, foreign proteins they tend to elaborate specific ferments which digest and destroy the foreign proteins."

"When body cells are attacked by digestive ferment, they tend to elaborate antiferments, the function of which is to neutralize the ferments and thus protect the cells."

It appears that antitoxins, agglutinins, precipitins, lysins, opsonins, etc., are simply ferment of enzyme manifestation due to tissue cell activities re-

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sulting from foreign protein and germ invasions.

Some time is required for tissue cells to acquire this property of producing specific enzymes and during this time infective bacteria may grow without much hindrance. The probabilities are that the first enzymes that are produced are used up by destroying the infesting organisms but when cells once have acquired this enzyme producing property, the process is continued for an indefinite time. This accounts for immunities lasting after the infection is eliminated. There appear to be various degrees or stages to which these enzymes dispose these intruders. If the enzyme production is such that the digestion of the germs is incomplete, poisonous or toxic symptoms may develop. Greeley says: "Any individual becomes what is called sensitized to an infecting organism soon after it or its products gain access to the general circulation, and so this means that his lymph contains newly developed enzymes peculiarly adapted to the disintegration of the special bacterial protoplasm involved, no sooner does such protoplasm find its way into his tissues that it is attacked and more or less completely digested. The symptoms arising from this process depend directly on the activity and quantity of such enzymes that may be available, no less than on the quantity of bacterial matter introduced. If these two factors are so related that immediate and complete disintegration of the bacterial matter takes place, no symptoms whatever occur. But if the digestive process proceeds relatively slowly, as without gastro-enteric digestion of albumin, through albumose and pepton to amino-acids, the poisonous action of the intermediate products shows itself in symptoms of inflammation at the point of introduction; in fever, increased pulse rate and malaise generally."

Therapeutic vaccine inoculations are employed for the purpose of hastening the establishment of this active sensitization. Experience shows that immunities against infecting organisms are more rapidly established from inoculation of attentuated or devitalized organisms than from the organism causing the infection. In rabies, for example, inoculation of the attentuated organisms (Rabies Vaccine) will develop immunizing responses in ten days. while a rabies infection will continue from two to six weeks or more before appreciable sensitizing activities take place. The same principle holds good in employing vaccines for pneumococcus, streptococcus or other infection. Here tissue cells come in contact with killed organisms where sensitization for the production of enzymes is not retarded as is the case with live organisms where they tend to devitalize the tissue cells in their battle for life. Furthermore, where tissue cells are dealing with killed organisms, enzymes production for a complete disintegration of the bacterial matter is more liable to take place than under the devitalizing influence of live germs. This is most important. As pointed out before, tissue cells when sensitized continue to produce enzymes, and if these enzymes are capable of completely disintegrating bacterial substances, toxic symptoms will be eliminated. This is what in all probability takes place where, in severe acute pneumococcus, streptococcus, colon bacillus or staphylococcus infections, the toxic symptoms subside within 24 hours after a dose of vaccine, and especially so if the vaccine is given early.

575 Ashland Ave.

The woman who went to the hospital still looks like a wreck. The one who received a little, commonsense medical treatment has rosy cheeks and says her doctor made a new woman of her.

Moral: Sometimes conservatism pays better than much scraping.

Every sore throat is a danger signal, says the United States Public Health Service, and may indicate some acute, infectious disease, such as diphtheria or scarlet fever. Take no chances. Have a physician make an immediate examination. A few hours delay may cause death.

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PHILOSOPHY—THE EVIDENCE OF EMBRYOLOGY.

Philosophy derives many proofs from the process of mammalian development and the study of that subject by embryologists. Continued segmentation reduces the yelk of the ovum of a mammal to a mulberry-like mass and the very first change after the reduction is the apperance of a greater definiteness. This comes first in the peripheral cells of the mass, when each cell acquires a distinct membrane. These peripheral cells are also distinguished, in a way, from the internal cells by their minute subdivision and by their greater completeness, as it were. These coalesce to form the blastoderm or germinal membrane. One portion of this membrane becomes unlike the rest of it and this unlikeness is due to the accumulation of cells at that unlike area. These cells are more minutely subdivided still and by their coalescence from an opaque round spot. And this spot, that is called the area germinativa, shades off gradually into the surrounding parts that go to make up the aforesaid blastoderm. There is no precise margin, neither is there any exact margin to the area pellucida that is later formed by similar processes in the midst of the aforesaid area germinativa. In the midst of the area pellucida the primitive trace is formed and this is the rudiment of that vertebrate existence; but this mere trace, at first rather indefinite, decides and forms the fundamental characteristic of the mature animal. It is only a shallow groove that becomes more and more

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pronounced. Its sides grown higher, their summits overlap and at last unite. And in this manner the indefinite groove becomes the top, this top forms the vertebral canal. In certain places this canal begins to bulge or make bumps, yet these insignificant bumps are the leading divisions of the brain. Along the tissue bounding the canal occur other spots or modifications and these are the beginnings of the vertebrae.

The blastoderm on its outer surface, while these changes are going on in its midst, has been changing from its inner surface, differentiating, as it is called. It has been dividing into two layers, a serous layer and a mucous layer. This division is at first indistinct and may be traced only about the germinal area, though it, little by little, spreads nearly the whole germinal membrane and all the time becomes more definite. From the mucous layer the development of the alimentary canal proceeds and another canal the vertebreal, proceeds from the serous layer. Along the under surface of the embryotic mass is a simple channel and this is rendered clear and distinct by a pinning down, on each side, of ridges which unite and join to form a tube, the permanent absorbing surface, of which is, little by little, cut away from that temporary absorbing surface with which it was at first connected, continuous and uniform. Just so and in a similar manner the entire embryo, that at first lies out-spread and flat on the yelk-sack, gradually rises up, enfolds its central or ventral region and by the enfolding of that becomes a separate mass, connected with the yelk-sack only by a narrow tube or duct.

These changes, that we described, mark out the general structure more and more plainly and changes just like these go on paralleled in the evolutions of each organ. The heart commences as a mere collection or aggregation of cells. The inner cells become liquid and thus form the blood, while the outer cells are transformed into solid walls. The heart may be called indefinite, because at this stage it has no lining membrane and is itself only a mere dilation of the central blood-vessel or tube. It is later divided into a resisting portion and a propelling portion and across the pumping portion there begins to grow a septum, which takes a long time before it shuts off the right and left sides of the heart from each other. And later comes another septum that divides the receiving portion of the heart and this is so slow in separating the two halves of that portion that there remains a hole through that septum, so that the auricles are not separated until foetal life is complete and the birth has taken place through parturition. In the intestine certain cells begin to multiply at a certain spot on the intestinal wall. This grows thicker and a projection appears upon the exterior of the intestinal canal. This forms the liver and as that organ grows it becomes distinct from the intestinal canal and the channels running through it are formed into ducts having clearly marked walls. In the same way certain cells of the external coat of the alimentary canal, at the upper portion, accumulate into lumps or buds, from which come the lungs, and those, in general outline and in detail of structure, acquire distinctness and definiteness, step by step.

Changes of this order continue long after birth and are really not complete until about the thirtieth year of post-natal life. All these are due to the body adapting internal conditions to meet external ones. And those modifications that bring about old age and death are those that cause rigidity of structure, restriction of movement, lessened pliability, and a gradual narrowing of the limits within which the vital processes go on. The end is an organic adjustment too narrow in its variations to longer permit the requisite adaption to changes of external conditions. Evolution is progressing in definiteness. Dissolution is progress in indefiniteness.

Keeping physically fit is the first rule to be observed in keeping well, says the United States Health Service. Exercise is necessary to health.

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BOOK REVIEWS

NOTICE:—It will be the pleasure of the WESTERN MEDICAL TIMES to furnish any book, reviewed in this department, to its readers at the publisher's price, delivery prepaid. If any single order covers two books, the purchaser will be given in addition, a year's subscription to the WESTERN MEDICAL TIMES, providing the publisher's price for the two is $5. or more. If you desire any one of the books priced at $1., you may have it absolutely free if you will send us $2. to cover a subscription of one year for the TIMES. Address your orders to the Advertising Manager, 138 North Center Street, Reno Nevada.

REGIONAL ANESTHESIA (Victor Pauchet's Technique). By R. Sherwood-Dunn, M. D., Officer d'Academie; Surgeon (Colonel) Service de Sante Militaire de Paris; Physician to the Cochin Hospital. 294 pages, illustrated with 224 figures in the text. Cloth; price, $3.50 net. Philadelphia and London: F. A. Davis Company, Publishers, 1920.

As its name implies, this not not, in reality, a work on local anesthesia by tissue infiltration, but rather deals with the technic of obtaining anesthesia through the obtunding either the root or trunk of a nerve, rather than by securing like results with attention only to nerve endings, which latter technic was employed for a considerable number of years.

Regional—or local—anesthesia is, as we know, very considerably replacing that obtained through the use of ether, chloroform and other general anesthetics, there are numerous reasons why such anesthesia is preferable. Primarily, such procedure robs the patient of his horror of oblivion, due to the use of one of volatile agents. There is not the unpleasantness following operation and, in a good many instances the patient passes into convalescence in better condition following the use of regional anesthesia. And too, there are cases in which both chloroform and ether are wholly contraindicated and where regional anesthesia, properly instituted and carried out, may be employed and without the least bad result. Consequently, it behooves us to give close attention to anything which will direct us toward a better technic in this connection.

In the proper institution of regional anesthesia it is, of course, of paramount importance that we know the nerves of the part and how to reach those nerves in the best possible manner. This means technic in addition to a proper anatomical knowledge. The book now before us is devoted wholly to the technic elaborated by Pauchet, who has given several years of careful study to the subject. The author, working in conjunction with Pauchet, has been able to give us what Pauchet has learned and in such a manner as to be easily understood, in the matter of technic, every little detail to be followed is entered into fully. Every application of the mode is further exemplified by special illustrations, which show us where to place our obtunding agents, that they may be the most effective.

A proper understanding of regional anesthesia and its possibilities will be found of great value to those of us who have to frequently work where we cannot have the benefits of skilled assistants. The man in the country, in particular, who has not such assistants, will find this book of great value, as a following of its teaching will allow him to accomplish much which he could not otherwise, were he obliged to depend upon other than the skilled for help. On the face of it, regional anesthesia may appear to be something to be employed by only the specially trained, but if one will but study his antomy and know the nerve supply of the part in which anesthesia is desired and will then apply the technic as laid down by the author and his associates, he will soon become skilled in this part of his work. Consequently, it is very apparent that this is one of the books which should appeal to every man in the practice of medicine. or dentistry for that matter, for it contains many things which everyone of us can apply in our everyday work. The dentist has been

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using regional anesthesia, with good results, for years. Why not the doctor? We believe, if you will study the precepts within the covers of this book and apply them, that you will make it your practice to use regional anesthesia more and more—possibly to the final exclusion of general anesthesia.

SEXUAL IMPOTENCE, by Victor G. Vecki, M, D., San Francisco, California. Sixth Edition. 12mo of 424 pages. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $3.00 net.

We wish that everybody in the medical profession could read the author's preface to this edition of his work. He will, of course, be called a pariah by some, because of it, but he tells more truths in a few pages than some others tell in a lifetime.

Today we are seeing the endocrine treatment of diseases in the ascendency and possibly in no other condition than impotence are their indications more marked. Because of this in this sixth edition of his book, a very considerable attention is given to this portion of the subject. While enthusiastic, he has been careful not to allow theory to slip in to too great an extent, but has rather clung closely to proven fact, in connection with the application of the endocrines in the treatment of impotence.

This edition, as those which have gone before, treats the subject in a rational manner and every phase of it is gone into in the author's usual pains-taking manner. He does not waste words in any part of the book, nor is he verbose, and this makes for easy reading and understanding. That he has conned the literature on the subject is shown by the many references throughout the entire book. To be concise of statement, we will say that he treats his subject in a commonsense manner and not in that attempted by so many other authors. We who read his book will know better how to discover the cause of impotence in the individual cases; likewise which will be the better course of treatment therefor.

FROM SERBIA TO JUGOSLAVIA, Serbia's Victories, Reverses, and Final Triumph: 1914-1918, by Gordon Smith. With a Preface, By Dr. Slavko Grouitch, Minister of the Kingdom of the Serbs, Croats and Slovenes to the United States. 360 pages, with Map of the Balkan War area. Cloth. New York and London: G. P. Putnam's Sons, Publishers. 1920.

More and more, as time goes on, are we getting the true history of the World War and its causes. More and more are we seeing that the conditions were really brought about by the central powers of Europe. We are shown in this book, written by an author who followed the Balkans throughout almost the entire war, that the Balkans, and Serbia in particular, were the focus from which the entire war wove itself.

In this book the author starts fhom the very begining of things, even going back to the war between the Balkans and Turkey, and carries the reader from the incipiency of the World War, which began in Serbia in July of 1914, to the Armistice Day in November of 1918. While of the Allies, the author was not a Balkan and so saw the conditions through unbiased eyes.

The intrigue of the central powers is shown in the action of Bulgaria, one of the original Balkan Allies, in the fight of those States against Tudkey, when that State, without reason, other than that instigated by Germany, through the German ruler of Bulgaria, declared war on Serbia and her allies, and how later the same State ignored the Russian government, all at the instigation of the central powers. The author not only tells us these things about Bulgaria, but he recites much of the conditions of Turkey, Greece and other States not directly in the Balakans.

That the author is fair is shown by the fact that the points out the mistakes of the Allies in their effort to thrust the

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Bulgarian upon the other Balkan States, that Bulgaria might assist her sister States in their battles against Austro-Hungary, when it was a known and recognized fact that Bulgaria was an enemy to all other Balakan States engaged in the war.

These and many other truths, facts gathered at first hands by the author, are included in this book. As a history of the Balkan side of the World War this book would have an interest, if for nothing else. While not a medical book, still there are many things in it which will be found of interest tto the doctor. Typhus somes in for attention, as do other things medical, and these are interesting, ceven though the matter is written by a layman.

SURGICAL SHOCK AND THE SHOCKLESS OPERATION THROUGH ANOCI-ASSOCIATION. By George W. Crile, M. D., Professor of Surgery, School of Medicine, Western Reserve University, Cleve land; and William E. Lower, M. D., Associate Professor of Genito-Urinary Surgery School of Medicine, Western Reserve University, Cleveland. Second Edition of "Anoci-Association" Thoroughly Revised and Rewritten. Octavo of 272 pages with 75 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $5.00 net.

When Crile first introduced his ideas of surgical shock and the prophylaxis against anything of the sort through anoci-association, some fault was found with him. His theories were more or less disputed and many would not accept them. However, along came the War and opportunity, such as probably would never have otherwise obtained, was given he and his associate to prove that those theories were based upon commonsense and were not the phantasies of a mind gone astray. We who have known Crile personally, know him as an intensely practical man, likewise as a conservative surgeon. We know that he does not insist that a thing is right until reasonably sure that such is the case. We know that patients operated under his method have come off the table in better shape, very frequently, than prior to operation, and all because Crile's theories have been proved out in a practical manner.

The book now before us not only advances the theories regarding shock and the causes and effects thereof. but goes a step farther and tells us how we may almost if not quite render our patient free from possible operative shock. The methods employed and the different sorts of special technic in connection with various organs and other parts of the body are described in such a manner as to give the reader a full working knowledge thereof. When some matter of operative technic will save shock, that point is given attention.

Much of the new matter in this edition is based upon observations made in the hospitals in Europe, as well as in the United States, during the war. The matter of theory of shock is very largely omitted, the effort being made to give the reader such an idea of the subject that he may put it to practical use. This book is particularly well illustrated.

"WADE IN SANITARY!" The Story of a Division Surgeon in France, By Richard Derby, M. D., Lt. Col., M. C., U. S. A., Division Surgeon, Second Division. 260 pages, illustrated. New York and London: G. P. Putnam's Sons, Publishers, 1919.

This is a book about the war which should be of particular interest to the physician, for it has to do with the things the members of his did in connection with the fighting Second Division, the Regulars and the Marines.

While he mentions the Roosevelts, in passing, we are pleased to notice that he does not build upon the fact that he is a member of that family. In fact, from beginning to end the author is an unassuming doctor, doing his best that the men under him might have the best sort of care.

This is another of the books which brings the reader closer to the war, as

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it really was. It gives him an intimate insight to the individual fighting, to the work of the surgeons, both along the front line and in the hospitals further back, in fact to almost every phase of military life, on the battle line and elsewhere. The author starts from the beginning and carries the reader along, campaign by campaign and battle by battle to the armistice day of the eleventh hour of the eleventh day of the eleventh month. After that he carries us into the Army of Occupation.

Many tales are told of the surgical work done at the front, as well as in the hospitals to the rear and in many instances are given the results attending the work. In many of these reports, with tabulations of operations, it is noticed that the mortality in abdominal cases was high, while in others it was surprisingly low.

The author does not claim all the glory for himself, for he is modest at all times, although commended for his good work and untiring efforts. He gives much credit to those immediately under him, as well as to every man in his division.

Dr. Derby's book will live as one of the interesting and first-hand histories of the great struggle. A history by one who was really in and of the Army.

A Text-book of Physiology, for Students and Practitioners of Medicine, by Russell Burton-Oputz, M. D., Ph. D., Associate Professor of Physiology, Columbia University, New York City. Octavo Volume of 1185 pages with 538 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $7.50 net.

In many ways this work on physiology is different than the usual text-books on the subject. In the first place the author departs from the arrangement usually used and inserts matter which does not occur, or to a very slight extent, in a special way in other books. Another difference is the very practical way in which the various subjects are handled, seemingly with the idea that, in this way, the student will get a clearer insight into the matter. It is a noticeable fact that, while the work is scientific from start to finish, many things, those things which have paved the way to the special study of physiology, are only mentioned in passing, and then to refresh the mind of the reader. The book, all the way through, seems to have been written with the idea of giving the student a clearer idea of the subject than is usually gained and to take the subject out of the class of bugbears and make it something really interesting.

The author gives just enough attention to the subject of comparative physiology, simply sufficient to force upon the mind that this is a necessity that the matter be better understood. The portion of the book devoted to muscle and nerve treats the subject in a manner entirely different than from that usually found and this way of handling makes its understanding one of greater ease. New ideas are brought to the mind, relative to motion, as well as to other things connected with this portion of physiology, or possibly they are old ideas clothed in a new and more comprehensive dress. We find that this state of affairs continues throughout the book.

The author says "Physiology is Medicine," and if such is the case he has made the study of medicinea real pleasure. While, of course, the author does refer to other writers, his book is far from being a rehash of that which has gone before. He had conned the current literature and that which he has found of proven fact has been introduced into his book. The fact that this book is "different" will add to its interest.

Arteriosclerosis and Hypertension, With Chapters on Blood Pressure, By Louis M. Warfield, A. B., M. D., (Johns Hopkins), F. A. C. P. Formorly Professor of Clinical Medicine, Marquette University Medical School; Chief Physician to Milwaukee County Hospital; Etc. Third Edition. 265

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pages, illustrated. Cloth, price $4.00 net. St. Louis: C. V. Mosby Company, Publishers, 1920.

The subject of arteriosclerosis and hypertension is becoming more and more important to the practitioner of medicine as the world gathers age. Our ways of living tend to the occurence of more and more cases of this sort and it is not among the old alone that we are seeing them. Life insurance companies are becoming more and more strict about blood pressure. In fact, the physician who does not determine blood pressure in his routine examinations may, sometime, be accused of malpractice. Only within the past couple of weeks has the matter of taking blood pressure, as a routine, been strongly demonstrated to us, when two young women, who gave every appearance of good health showed a pressure of 160 or over and when such condition led to further examination of the heart and the finding of serious pathological changes in both cases.

The author of this book does not offer it as a book of reference, giving the ideas of himself as well as others, but rather confines himself to his own personal findings and endeavors to give us a guide to a better understanding of the matter under discussion. Much of the matter in his book is based upon the clinical manifestations in his own cases. There is one thing brought out in this book which should have more than passing attention. The author says the average individual sees his dentist at least once a year; more frequently twice, or oftener, but that he gives no thought to physical examinations at the hand of his physician. He insists that such physical examinations, at stated intervals, are of as much importance as the dental, if not more. This idea we believe to be absolutely sound, for were every man, woman and child given a thorough physical examination yearly, or better, twice a year, it is very probable that many things leading to an early hypertension or arteriosclerosis might be avoided.

Every insurance examiner would do well to read the chapter devoted to that portion of the subject. It is a something on the matter which shows more than passing commonsense. In fact, the entire book is based upon that one thing more than anything else, for clinical fact, rather than theory, enters into every discussion.

The chapter on blood pressure, both in medical and surgical conditions, brings out many points of interest. For instance, the taking of repeated readings in a case of suspected skull fracture may bring about a diagnosis of uremia, with nothing more or less than a simply external "bump" of the head, and no fracture. And this is an example of the many practical applications which occur throughout the book.

It has been the author's intention to give us something which would lead to a better understanding of the subject, without, as has already been said, giving us a reference to the general literature of the day. In view of the increasing number of cases hypertension, we cannot afford to overlook the study of the question whenever possible.

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS, by George W. Norris, M.D., Assistant Professor of Medicine in the University of Pennsylvania, and Henry R. M. Landis, M.D., Assistant Professor of Medicine in the University of Pennsylvania, with a chapter on Electrocardiograph in Heart Disease, by Edward Krumbhaar, Ph.D. M.D., Assistant Professor of Research Medicine in the University of Pennsylvania. Second Edition, Thoroughly Revised. Octavo Volume of 844 pages with 433 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth $8.00 net.

When we read and reviewed this work a trifle more than two years ago, we could not see that the authors had omitted anything worthy, in the least of attention. However they tell us that, in

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this second edition, they have added the consideration of spirochetal bronchitis, influenza, streptococcus empyema, inflammatory conditions of the lungs of uncertain etiology, calcification of the lungs, pneumopericardium, etc. Much of the text in this edition has been changed, or completely rewritten, that it may conform to the later findings, of a proven character.

At the time of the first appearance of this work we had not passed through the epidemic of influenza, but now the authors go very deeply into this subject and give us the various opinions and findings which have come to their notice. They, like others, do not seemingly reach anything very definite as to the bacteriology of the disease, but they do give us very complete pictures of the pathology, as well as of the physical diagnostic signs.

We have found this a remarkably good reference and guide in the study of chest diseases, be they of whatever organ or tissue within the thorax. The pen pictures presented are very clear and enable the reader to apply the knowledge gained from the book in the study of his cases, with the result that he receives a very considerable help in the making of complete and correct diagnoses. That the first edition of this book, with an added reprinting a year later was out of print within two years speaks well for its excellence and for the manner in which it was received.

Very much of the work is based upon the clinical observations of the authors and this adds much to its practical work, rather than would have been the case had it as a basis a considerable amount of theory. This edition, like the first, is well illustrated. There is a clearness of diction and description which make for easy reading and understanding.

PASTEUR—THE HISTORY OF A MIND, by Emile Duclaux. Late member of the Institute of France, Professor at the Sarbonne and Director of the Pasteur Institute. Translated and edited by Erwin F. Smith and Florence Hedges, Pathologists of the U. S. Department of Agriculture. Octavo of 363 pages illustrated. Philadelphia and London: W. B. Saunders Company, 1920. Cloth $5.00 net.

In a way, this is rather a difficult book to review, for, covering, as it does, almost the entire life of Pasteur, or rather the "history of a mind"—Pasteur's mind—during his entire professional career, one knows hardly where to begin or where to conclude his remarks in covering such a stupendous subject. For the life and mind of Pasteur were stupendous.

The author begins even before the advent of Pasteur in the biologic field and leads up to him through the things which were accomplished by his predecessors and in this way gives added laurels to the achievements of this man who probably did more to advance scientific medicine, in numerous ways, than did any other human being. The life and mind of Pasteur are considered in chronologic rotation and it is shown how one idea led to the later perfection of another—how one experiment led to another of still greater importance.

While many of Pasteur's experiments and findings are cited by other authors, there is probably no other book than the one before us that goes more into detail. We can gain much knowledge, at first-hand from what Duclaux has written and if we read closely, we will find a marked clearing up of many hitherto vague points connected with the work of Pasteur. We will discover how the findings in connection with plant and other life led finally to those things connected directly with humanity. We must admit that the range covered is so immense that it is an impossibility to do the book justice in a review. It must be read to be appreciated. The translators have given us the material in a style of English which is pleasing and were it a novel, rather than the history of an actual man and

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his mind, it is our belief that it might become one of the "six best sellers."

THE SURGICAL CLINICS OF CHICAGO. Volume IV Number II (April 1920). Octavo of 222 pages, 79 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Published Bi-Monthly: Price per year; Paper $12.00; Cloth $16.00.

This number of the Clinics is replete with good things and many of them will be found as interesting to the general practitioner as to the surgeon. We are encountering ectopic gestations now and then and possibly some of them are overlooked, possibly because of lack of diagnostic acumen. There are two reports in this number which will, if we read them closely, give us diagnostic points well worth remembering. While the surgical side of the question is, of course, given the high lights, still those seemingly slight points should stand out with prominence and attract our attention.

This is but one of the numerous subjects discussed that will be of practical worth to the practitioner. For instance, we are given the technic for radical cure of varicocele, and that in very distinct language and further elucidated by cuts showing the different steps taken. We are also told how to perform a prostatectomy, by way of the perineal route, and this in succinct terms.

There is an interesting article on the primitive surgery in Ancient Egypt, with illustrations showing various surgical procedures of that day. From this we can draw comparisons and see that, in so far as fundamental ideas may be concerned, there is really nothing new under the Sun. We may be a trifle more refined in our technic and methods.

Herniotomy is given consideration in two of the reports and one of these deals with local anesthesia, as applied in this operation. Numerous other subjects, among them several of orthopedic conditions, are discussed. As a whole, this number of the Clinics is one full of practical things, the sort which will be of help to the doctor in everyday practice.

THE MEDICAL TREATMENT OF CANCER, By L. Duncan Bulkley, A.M., M.D., Senior Physician to the New York Skin and Cancer Hospital, Etc. 386 page. Cloth, price $2.75 net. Philadelphia and London: F. A. Davis Company, Publishers. 1919.

No matter if a man may differ with us in his ideas, if he has experience upon which to base those ideas, we must listen to him with respect. Bulkley says that surgery, while apparently showing something called "cure" in a few cases of cancer, has not given the success in that direction which was anticipated from it. Cancer mortality, in civilized countries is still increasing, regardless of surgery, hygiene or any other measure to put a stop to the evil, or, if you please, disease. Bulkley shows that cancer is a result of civilization and refinement, the latter probably of diet or mode of living, for cancer is not at all prevalent among the primitive races, nor does it occur to any considerable extent among the lower animals.

The author reports many statistics to show that cancer is not only increasing, but that what has so far been done seems to offer no check to its appearance. Nor has the treatment, of various sorts, so far prevailing, other than possibly that of dietary along with indicated medical remedies, brought forth much in the way of success.

Bulkley differs very considerable from other authorities, but his views are given after almost half a century of close clinical attention to and study of the disease and what he says is based upon such experience, rather than upon theory. Like some others, he is concluding that cancer is rather a systemic than a local disease. He says we are as much at sea as ever regarding the cause, and does not appear to think that trauma is always predisposing. Nor does he wholly agree with the "embryonic rests" theory, for nobody is without those cells

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and all do not suffer from cancer. In fact Bulkley apparently disagrees with many of the previously advanced ideas and does so in such a logical manner that we are forced to accept his views to a very considerable extent. The fact that many surgeons are taking almost an about face action in the surgical treatment of the disease and are practically admitting that the knife is not an absolute cure, if a cure at all, makes us think that it is possible that Bulkley is right in his views of the matter, and that we must do more, much more, than remove the clinical manifestation of the disease, the cancer *per se*.

Bulkley is an interesting writer and although you may not agree with him in the least, you will enjoy his book.

SYMPTOMS IN THE DIAGNOSIS OF DISEASE, By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Diagnosis in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, Etc. Eighth Edition, Thoroughly Revised. 562 pages, illustrated with 195 engravings and 9 plates. Cloth, price $6.00 net. Philadelphia and New York: Lea & Febiger, Publishers, 1920.

While clinical symptoms are more or less upon the taboo list and we are told that the laboratory is the only thing in which we should place our trust when it comes to the matter of making a diagnosis, still there are a few of we old fashioned individuals who retain the idea that there is much in symptoms and that sometimes those signs give us a clearer insight into the condition under observation than does the laboratory. We admit that the body is nothing more or less than an animated chemical laboratory and that the man with the test tube, microscope or other instrument of precision can give us some idea of the deviation from the normal, but still, at the same time, we must still depend upon symptoms to check up the laboratory worker.

In the book before us the author, while admitting that the laboratory is an efficient aid in some instances, does not rely wholly upon the latter, but gives us the results of his wide experience as a clinical diagnostician. And he does it in that particularly pleasing manner of his which appears in everyone of his written words. He theorizes but little, but bases his remarks upon what he has actually seen as a clinician and does it in a manner which makes the subject clear, even to the tyro in medicine. He not only brings forward the big points, but the little ones as well and in that way gives the reader a very clear conception of every condition discussed.

As a rule, when one reads the title "diagnosis," his mind reverts automatically to diseases of the chest, but Hare, in this volume does not quit with that portion of the body, but considers everything from the end of the longest hair of the head to the extreme tip of the great toe. He takes up each portion of the body in a serial way and in that manner assists one very greatly in the matter of differential diagnosis. It goes without saying that the language of the book is such as to make it one of easy reading and comprehension, for such is anything that Hare writes. This is one of the practical books which will be of great value, both to student and practitioner. It is well illustrated, thus further elucidating the text.

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Superintendent and Medical Director, Rocky Glen Sanatorium
McConnellsville, Ohio

It is very often said that to diagnose is hard, but that when a diagnosis is made the treatment is easy. This is not true of pulmonary tuberculosis. It is very difficult to make an early diagnosis and much more difficult to institute treatment which will guarantee a "cure." The result obtained in the majority of cases is in direct proportion to the stage of the disease when the condition is diagnosed. We know that under proper treatment about 90% of the early cases will get well; that only 50% of the moderately advanced cases reach the apparently arrested stage, and that only about 25% of the advanced cases ever obtain an apparently arrested condition. When we pause to consider all this, we see that the earlier the diagnosis, the easier the treatment, and vice versa.

Since the finding of the cause of pulmonary tuberculosis, namely, the tubercle baccillus, there has not been a marked change in the treatment. True enough, several remedial measures have been offered and heralded as cures, but each and every one have failed in turn. Up to the 19th Century the treatment consisted of bed care, with the patient housed in a room without windows, and no opportunities of getting fresh air. It was feared that the patient would catch more cold if the fresh air were permitted to enter the room. The result was that most "consumptives" died. In the 19th Century men began to notice the rapid pulse which is a constant finding in pulmonary tuberculosis. In order to overcome this they advocated hill climbing to strengthen the heart muscle. The result was that most of these cases died, many having severe hemorrhages.

After a time it was found that patients who took long sea voyages would improve markedly . Physicians therefore began to advise sea voyages, thinking that salt water was the cause of the improvement, but never taking into consideration that during the voyage the patient was getting almost complete rest.

It was not until 1890 that the first sanatorium was started for the treatment of pulmonary tuberculosis, upon the routine which we now use. Several more were started in the following few years and at the present time we have sanatoria scattered thruout every state of the union.

There is no definite medicine that will cure pulmonary tuberculosis, or aid its cure in the least The medicines and serums that have been heralded as tuberculous cures were based upon the theory of destroying the tubercle bacillus, but all have failed and now we use medicine as an aid in taking care of temporary symptoms or as a means of keeping up the confidence of the patient.

The treatment of pulmonary tuberculosis is the same, whether the patient is at home or in a sanatorium. I will, however, give you the routine used in all sanatoria, and the principle things that are employed in the attempt at an arrestment of the disease. The

*Read by invitation before Fairfield County Medical Society, Lancaster, Ohio, July 27, 1920.

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most important things necessary are rest, fresh air, proper food, and a contented mind. Exercise is not used until the chest condition has become at least quiescent.

The wrong interpretation of rest is given by both physician and patient in a number of cases. We do not mean—just stop work and loaf all day. We advise resting in bed for a definite number of hours each day. If the tuberculous condition is extremely active, the patient may need absolute bed care, his meals brought to him and proper nursing attention. If the case is progressing favorably, and the condition is not very active or only an early lesion, then it is not necessary to have absolute bed care. Two hours bed rest in the morning and three hours in the afternoon will be sufficient. The safest routine to follow at the start is as follows: Arise at 7 a. m. and have breakfast; go to bed at 9 a. m. and arise again at 11 a. m.; dinner at noon, and back to bed again at 2 p. m., remaining there until 5 p. m.; supper at 6 p. m., and back to bed again at 9 p. m., remaining there until 7 the next morning. It is not necessary for the patient to sleep while he is in bed. The object is to have him relax as much as possible, which will prevent unnecessary tissue destruction and allow the circulation to take care of the waste that is going on in the lungs. If the temperature is over 100 in the afternoon the patient should have absolute bed care until such a time as the temperature remains below this mark. A temperature of 99.6 in tuberculosis means that the patient is having fever, but a temperature of 99.2 does not necessarily mean fever.

Rest is used only as a mechanical measure. When the patient is lying down in bed, there is very little destruction of the tissues of the body, breathing is not as deep and not as frequent. When a tuberculous patient is up and about he breathes about thirty times a minute, and when absolutely quiet or asleep, the breathing is reduced in depth and the respiration averages about fifteen breaths a minute. Nature is trying to build a wall around the tuberculous area. With a constant contraction and expansion of the alveoli one can readily see how hard a task it is. If we allow the patient to exercise, breathing deeply and frequently, the small fibrous walls are constantly torn open and the tuberculosis is permitted to spread. But when we reduce the possibilities of tearing the fibrous wall, we increase our aid to nature's attempt at healing and in this way make the wall heavy enough so that the entire tuberculous process is enclosed with a very slight possibility of breaking open. Nature tries to put a lung at rest by limiting the motion of the affected area. If a splint could be made which would put a lung absolutely at rest we would be able to have a great many more clinical cures. Several attempts have been made to invent such a splint but all have proven impracticable.

It is the duty of every physician to impress upon the patients that rest is their medicine and that they should take it as honestly and religiously as tho it were poured from a bottle. Unless the physician can gain the confidence of the patient and can hold it over a long period of time, the results will not be as good as they should be. Some patients will get well in spite of what they do, whether they rest properly or not, but this is the exception to the rule.

Reading and writing are not to be permitted except when patients are in a very good condition. The motion of the arms during writing and the mental concentration while reading will cause a good deal of tissue destruction and in a number of cases cause a rise in temperature. Proper relaxation is not permitted when a patient will twist and turn while reading or writing. The argument may arise that it is very hard for a patient to lie in bed every day, doing nothing, not being permitted to move, and expected to be as quiet as possible. This is very true, but, unless the patient makes up his mind to do this, having been convinced by the physician that he must do it, the chances of an ultimate arrestment are reduced in proportion to the amount of motion or exercise the patient is taking. Some patients will not improve

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regardless of the treatment instituted or the amount of rest they take, but these cannot be taken into consideration when the method of treatment is to be judged.

FRESH AIR.

Fresh air is an absolute necessity regardless of whether the patient has tuberculosis or is perfectly well. Pure air or proper oxygenation is a necessity for proper health. This is much more to be emphasized in the treatment of pulmonary tuberculosis. The patient has not the proper amount of normal lung for obtaining oxygen from the air so that a purer and fresher supply is necessary to replace this difference.

It is not absolutely essential for a patient to sleep out-of-doors. A properly ventilated room will do. Sleeping out-of-doors or on a sleeping porch is the better, but not an absolute necessity.

The question of climate is brought up when fresh air is considered. The climate makes no material difference in the ultimate result in any given case. The question of where to send a case was thought to be a big factor only a few years ago. Now we learn from statistics that the percentages of tuberculous cases developing in each and every state among the native born are about the same, and that the deaths from tuberculosis range the same for Ohio as they do for Arizona, California, Texas, and almost every other state.

Patients can get well in one state as well as another, in one locality as another, upon a hill as well as in a valley, at sea level as well as an elevation of 5,000 feet, the length of time necessary to effect a cure, and the percentage of cures being about the same. It is absolutely erroneous for a physician to advise a change of climate with the idea that the climate will cure the patient. Every one of you recall cases who have returned from some haven of "sure cure" stating that they felt as good, if not better, at home, than they did while away. This is being proved more every day, and every state is attempting to develop its sanatoria to take care of the number of cases it has, utterly disregarding the climate in its locality, and trying to make the environment please the patient.

If a physician must advise a change due to the necessity of removing the patient from his business or his family, the advice should be directed so as to consider environment, and not climate. Give the tuberculous patient a place where he will be perfectly satisfied, with the proper medical supervision, and the patient will make the climate suit himself. If the patient does not improve under one type of environment, it is wise to try another, but if the environment is good, and the patient does not improve, you can rest assured that a change to some other climate will not change his progress. A change from one place to another often works wonders, but it is due to the determination and assurance that the supposed change of climate will make him well. A little Christian Science applied to climate works wonders in some cases, but should not be relied upon in all cases.

When we stop to consider that we have good sanatoria in Arizona and California, which are supposed to be ideal climates, and in Saranac Lake, New York, and Ashville, North Carolina, the last named undoubtedly situated in the worst climates in the United States, a doubt arises as to the value of climate in the treatment of this disease. The true meaning of climate is—merely a condition of the mind, and every patient can make his own climate suit him as he sees fit.

It is fresh and pure air that is needed, regardless of the amount of moisture or elevation present. And pure air can be obtained in every state. The statistics of the few sanatoria in Ohio show that just as many cures are affected as in any other state in the Union.

It is to the advantage of the physician to try and cure the patient as close to his home as is possible, because it permits the patient to see his friends and relatives occasionally, the physician can keep in touch with the progress of the patient, and if the results are not as good as might be warranted

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in that particular case, he can then advise a change of environment.

PROPER FOOD.

All foods are proper for the average tuberculous patient. If he has no symptoms pertaining to the stomach, and his appetite is good, he may have a full diet, or anything he likes. Cramming of food should be forbidden, but the appetite should be satisfied. An attempt at a variety of food should be made in order to keep the appetite of the patient at the proper standard. When a patient has remained in a sanatorium for a long period of time, we usually find that his appetite becomes very poor. He usually states that he feels hungry but that one mouthful of food spoils his appetite. This is due to the fact that eating hotel, restaurant, or institution food, which is cooked and prepared in large quantities, cannot taste as good and as appetizing, especially when eaten for any length of time, as food that is prepared in the small quantities that are served in one's home. We try to overcome this by giving the patient a vacation for about 10 days, so that when he returns he will again relish the food which is served.

A patient who is under weight should make a steady gain in weight of at least one pound per week providing his condition is improving. The amount that a patient eats does not influence the gain or loss in weight very much, but we usually find that the patient who has a good appetite gains weight regularly. A tuberculous patient who is improving and gaining weight will usually become heavier than he ever was before. He will lose some of the excess weight when he returns to a normal routine of life.

To sum the food proposition up into a concise form, it is safe to tell the patient to eat as much and of everything he wants without overcrowding the stomach.

It is a hobby among physicians to advise as much milk and as many eggs as the patient can possibly cram into the stomach. This is absolutely wrong. It is not necessary to give more milk or eggs than the patient likes. Cramming so many eggs into the stomach every day soon turns the patient against this line of diet and upsets the stomach. There is just as much nourishment in meat as there is in eggs and it is just as easily digested if properly prepared. The patient who gives a history of having crammed a great deal of milk and eggs into the stomach usually has not made as much progress toward the arrestment of the disease as one who has partaken of all foods.

A properly regulated diet consisting of all types of food is the best in the long run.

CONTENTMENT OF THE MIND.

A satisfied mind is one of the most important things in the treatment of pulmonary tuberculosis. Without it one cannot tell how the case is going to progress. With the patient constantly dissatisfied with everything around him, disgusted in himself, wishing that he were dead, always figuring on a new physician or change of sanatorium, or of climate, we can readily see that such a patient cannot do well.

He must make up his mind that he is going to get well, that he will do everything necessary toward getting well, that he will make the best of climate, that he will change conditions to suit his own case and thus secure self-satisfaction, and that his physician should be his chief advisor and not his next-door neighbor. Given such a patient, in the proper stage of the disease, a physician could almost vouch for a very good result in 99 out of 100 cases.

If a patient is home-sick, worrying about his friends or family, or constantly fretting about external conditions, he will soon begin to feel dissatisfied and will make a change. With this thing going on every day for weeks or months, the patient will never stay in one place long enough to get well, and finally will go home where he will be a source of danger and menace to his family and friends. A patient must be instructed that unless he is satisfied he should make a change to what he thinks will satisfy him. No physician wants to take care of a dissatisfied pa-

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tient, because sooner or later that patient will become a knocker instead of a booster. Therefore, by all means, preach a little Christian Science to your patients when you know that they must be under treatment for a long period of time.

EXERCISE.

When a case has become quiescent, or when the activity has been reduced so that there are only occasionally a few crepitant rales in a small portion of one lung, it is safe for the patient to begin exercising. This must be regulated just the same as the rest. A patient is permitted to take 15 minutes exercise twice daily, preferably walking, taking a rest immediately afterward. The temperature and pulse should be watched carefully. If the temperature goes over 99.2 after the patient has rested for one-half hour following the exercise, or if the pulse remains over 90, then the exercise should be stopped. Patients may start to exercise and have to stop several times before it is safe to increase the exercise to 30 minutes twice a day. It should be impressed upon the patient that the exercise is also given as medicine, that it throws a definite amount of medicine or building material into the system, and that a smaller dose than that which is advised will not give him the proper resistance, and that every overdose may act as a poison which may kill him.

It should be the object of the physician to build the patient back to a working capacity. It is no trick in an early case to get rid of the cough, but it is some task to gradually build a patient to the point where he will be able to go back to work and earn his living.

In this day and age we are making too many loafers of our tuberculous patients. The patient is so impressed with rest and the fear of exercising that when the physician attempts to have the patient take a small amount of exercise, he does not follow instructions very closely for fear of another breakdown. Again, there are others who always take more exercise than is prescribed and they must be watched even more closely than the first class of prescription slackers.

Several sanatoria are arranging vocational training courses for patients, truck gardening, poultry raising, and the like. These are all very good, but must be under the care of an experienced physician. If the physician will remember that the patient not only wants to live, but wants also to get back to work, he will strive more toward a graduated exercise than heretofore. Remember that too little exercise will in most instances make a loafer out of the patient, and too much will kill him. Therefore it pays to watch the amount taken by the patient just as tho it were medicine.

MEDICATION.

There is no definite "cure-all" for tuberculosis. Just a few days ago a paper clipping was handed to me by a patient which heralded a medicinal "cure" for tuberculosis. The patient was very anxious to know whether or not there was anything to it. He was willing to try it if there were any possibility of a cure in his case. And so it is with many others. Any heralded "cure-all" is usually taken up for a while, and when found to be absolutely no good, something else is tried. It should be the duty of the physician to convince the patient that there is no medicine that will do him any good, and that he should not take any patent medicines.

There are times when medication is necessary. When a patient has a marked loss of appetite, a tonic may help some if given for a week or ten days. If a patient has a very severe cough which does not permit him to rest properly it may be necessary to give him something to ease this condition. Opiates should not be used unless absolutely necessary. Cathartics, salves, and linaments may be necessary for temporary relief of some acute disturbances. But you will find that the patient who does not take any medication always gets along best.

Creosote compounds should be absolutely barred from use in the treatment of pulmonary tuberculosis. I have never seen a patient who has taken

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creosote in any form for a month or more who has not had a great deal of ensuing trouble with his stomach, and in the majority of such cases the progress is very poor, and it often requires several weeks to get the stomach into proper shape again.

Tuberculin at one time was heralded as a "sure cure." Now we find that the patients who do best on tuberculin need it the least. Every active case of tuberculosis throws enough toxin, and sometimes too much, into the system, so that tuberculin is not necessary. The use of tuberculin is being reduced every day. We are finding that it does a great deal of harm unless properly administered. It must be given by a competent man, and the competent man usually finds that he can do better without it. Some men use it as a means of keeping the patient interested, so that he will return to the office as directed. This is a very poor method. If the patient has no desire to get well and will not report when asked, then a physician should refuse to treat such a patient.

Only a few years ago Ether inhalations were heralded as cures for tuberculosis. I personally tried out the treatment both by inhalation and by gluteal injections, and I found that it did absolutely no good. Those that took ether by inhalation died before long, and the others improved the same as they would have had they been taking the proper amount of rest.

Some men advocate X-ray treatments for tuberculosis, claiming that it raises the lymphocyte of the blood. This I have also tried in a few cases and the results did not warrant its use. The X-ray will increase the lymphocyte count in the blood but will not hold it there. In 24 hours the blood picture is the same as it was before the treatment. If some method could be found that would hold the lymphocyte count of the blood above the original count, the prognosis in a given case would be better.

SPECIAL TREATMENTS.

There are a few special treatments which are of benefit in selected cases. Heliotherapy, especially in children, shows very good results at times. The treatments must be given very carefully, the time of exposure to the sun or to the lamp timed very closely and the conduct of the patient noted after each treatment. Heliotherapy is of very little value in pulmonary tuberculosis and does its most good in surgical tuberculosis, skin cases and tuberculous peritonitis. Further than this it should be discarded. Too long exposure to the sun's rays will greatly weaken the patient, cause headaches and will cause a rise in temperature.

Artificial pneumothorax, or compression of the lungs, is very beneficial in unilateral cases which do not show an improvement after a proper length of time over the usual routine. Given a case with one lung entirely negative or inactive, with very little fibrosis, and the opposite lung very active, with a threatening caseation or cavity formation, it is very good policy to compress the lung. This is done by injecting nitrogen gas or air into the pleural sac, starting with small doses of about 200 or 300 C. C. and increasing gradually to 500 C. C. at each injection. At first the injections should be given every 4 or 5 days, but as the lung becomes almost entirely collapsed the treatments should be given every 2 weeks, or as the patient needs refilling. Compression of the affected lung puts this lung at rest and permits nature to heal the affected area. It acts in the same relation to lung as a splint to a broken bone. Remarkable results are obtained in a number of cases and some are put back to work when at the outset it was doubtful whether the patient could live. It is necessary to continue the gas injections for about a year in the average case and then the lung will gradually re-expand. If nature has done her work, the affected areas will remain in contact and the wall built around will prevent the further spread of tuberculosis.

In cases that cannot take gas due to pleural adhesions or due to other anomalies and the affection is unilateral, surgical means may be used. A small portion of each rib on the af-

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fected side is removed. This is done under local anasthesia. The entire operation is done in one or in two stages, and when the ribs have been removed the entire wall is permitted to cave in. This produces immobility of the affected side and in a number of cases an arrestment of the disease is produced. Altho this method is not used very much in this country, still great benefit can be derived from it and it will eventually be used more extensively.

Whether a method of treatment will ever be found that will act directly upon the tubercle bacilli is hard to predict. The fatty capsule of the tubercle baccillus is so resistant to all forms of medicinal substances that anything that will penetrate the capsule will more than destroy normal tissue. So it appears that the method of research for the treatment of tuberculosis should be along the lines of prevention instead of cure.

Altho prophylaxis plays an important role in the treatment of tuberculosis, I will not attempt to discuss it fully. Suffice it to say that we must remember that tuberculosis is a childhood infection and an adult disease, and that we should aim to prevent infecting the children and we will have solved thereby a great problem in checking pulmonary tuberculosis.

SUMMARY.

To summarize the treatment of tuberculosis let me state as follows:

1. Remember that there is no "cure all" medicine for tuberculosis. A case that will do well with medicine will do better without.

2. Rest is the most important factor in the checking of the activity. A patient cannot get too much rest at the start. By rest we mean going to bed for a definite number of hours each day, the same routine being followed each and every day.

3. Fresh air can be obtained anywhere. There is no special "cure all" climate for tuberculosis. One county is as good an another. It is not absolutely necessary for a patient to sleep out of doors but is merely preferable. Any good ventilated room is all right.

4. Patients are permitted to eat any food that they may wish, and as much as they wish. If the stomach is out of order a special diet may be necessary for a while, but even in these cases a regular diet is best. The idea of a lot of milk and eggs should be discouraged and cramming too much food into the stomach with the idea of causing a gain in weight should be prohibited.

5. Exercise is as important in its turn as is rest. It should be watched closely, increased gradually or decreased if seen fit, and the patient warned that an under dose will make a loafer out of him whereas an over dose will kill him.

6. Contentment of the mind is an absolute necessity before any definite results can be obtained. Without the proper fighting spirit aroused in the patient, and an air of satisfaction produced the treatment is usually for naught.

7. Special treatments such as tuberculin, heliotherapy, artificial pneumothorax, and complete chest collapse should be used in very selected cases. They will do a world of good if used properly, but will absolutely kill if used improperly or by an inexperienced man.

8. Tuberculosis is a disease taking months or years to cure and it is absolutely essential that the physician keep up the confidence of the patient at all times to insure proper following of advice.

If a doctor said to you, "Your present condition is due to the retention of poisons that were retained after the flu," and if that doctor had been the one who treated you when you had that disease, what would be your real, candid opinion of him? Might be tempted to sue him for malpractice, or something? Yes?

When we hear somebody say, "He does a beautiful currettage for $150," we sometimes wonder, for what else?

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DEPARTMENT OF NURSING.

E. MILDRED DAVIS, A.B., R.N., Editor.
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HOW TO TELL A GOOD MIDWIFE. (*Abstracted From "The Trained Nurse And Hospital Review"*) *September,* 1920.

A midwife, in order to be safe, must be clean, trained, and careful, also properly supervised. She should attend cases of normal labor *only* and summon a physician when doubtful of the conduct of same. No medicine, except that allowed by law should be administered by a midwife, without the order of a physician. A dose of ergot is usually permitted after expulsion of the placenta.

The midwife should visit a mother and child for nine consecutive days after delivery. She should co-operate with local agencies, who are interested in the welfare of mother and babies. The midwife may be an asset instead of a liability (*as is often the case*).

It is not practicable to either suppress or ignore the midwife. She is in our midst, and it is far more profitable to cooperate with her, appeal to her pride and ask her assistance in instructing mothers concerning care of themselves and babies. The safe midwife will be subject to kindly constructive supervision.

THE X-RAY MOVIE. (*Abstracted From The Modern Hospital*) *September,* 1920.

The Radio-cinematograph is a combination of the X-Ray machine and the moving picture camera. This makes possible movies of the interior functioning of living organisms. This new invention has already reached the practicable stage of usefulness, and when entirely perfected will develop new fields of investigation, which radiology will enter. Dr. Lorman and Dr. Comandon, two French scientists are the originators of the Radio-cinematograph.

The greatest difficulty encountered in combining the two machines was the danger of thermic infiltration by the ultra-violet rays, while the procedure of photographing the subject was in progress.

The inventors arranged a method for changing the character of the rays employed, which was an achievement comparable to the original discovery of the Roentgen ray.

KANSAS CITY MEETS NURSE PROBLEM. (*Abstracted from the Modern Hospital*) *September* 1920.

As a pioneer among municipal public schools, the Kansas City Junior College is offering a preliminary course for nurses including the necessary theoretical instruction in sciences to those, who are in training in the various hospitals of the city. Seven hospitals have responded by enrolling their student nurses, and it is believed that this method will attract to the nursing world women, who would not otherwise be interested.

The course of study includes the fundamentals of drugs and solutions, the history of nursing, physiology, chemistry, bacteriology, anatomy, cooking and hygiene also study of sick room procedure. The subjects were arranged for them under the regular school instructors.

LABORATORY WORK FOR NURSES. (*Abstracted from the American Journal of Nursing*) *September,* 1920.

From a diagnostic standpoint it seems, that greater advances have been made in laboratory methods than in any other branch of medical science. The time is past when the physician relies upon the character of the pulse and condition of the tongue as landmarks for a diagnosis.

He resorts to the more accurate methods such as a complete physical examination, laboratory studies, and X-Ray.

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Quotations from Doctors:

No. 6

"The majority of cases of pneumonia, in my experience of thirty years' medical practice, have had more or less pleuritic complications.

"I presume this is the experience of my colleagues.

"The most grateful application that can be made to a patient suffering with pneumonia is a warm

poultice under a moderately firm binder or jacket. Its action is, first through the superficial vessels, and then more slowly but just as efficiently on the deeper congested parts."

J. A. H., M. D.,
NEW YORK CITY, N.Y.

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The average physician is too busy to devote his time to the thorough laboratory investigation of his cases, and an extensive field has been opened to women who desire to avail themselves of the opportunity to qualify for this work.

COMBINED FIVE YEAR COLLEGIATE AND NURSING COURSES. (*Abstracted from the Pacific Coast Journal of Nursing*). *September* 1920.

Two Universities and three colleges in California offer combined courses, consisting of three years of collegiate work and two years in an accredited school of nursing. The Universities and Colleges where such courses may be obtained are Stanford University and School for Nurses. University of California and Hospital, Miles College, affiliated with the University of California Hospital and Stanford University School for Nurses; Occidental College and Pasadena Hospital; College of the Pacific University of California Hospital and Stanford University School for Nurses.

HAPPY CHILDHOOD THE WORLD OVER. (*Abstracted from the Red Cross Magazine*), *September*, 1920.

The Junior Red Cross (which is really the American Red Cross in the schools) is accomplishing remarkable results among the children of the country with eyes turned towards the future, when these boys and girls shall be grown to manhood and womanhood. The war left a million orphans in the Balkans.

The schools for war orphans in Roumania receive aid from American boys and girls through the Junior Red Cross. Boys in the ungraded classes of New York schools have made many toys to be sent to Europe. The Junior Red Cross supports such organizations as a floating orphanage in Venice, milk and feeding stations in France, where many waifs have been rescued, sewing rooms, where refugee garments are made and distributed in large quanities. In orphanages and farm schools on the Peninsula of Italy, there are nearly five hundred wards supported by the Junior members of the American Red Cross. Last winter a thousand French children from the devasted regions were sent to warmer sections of the country, and five thousand little Belgians were having a hot lunch every day at the Junior canteens.

American school children have already raised nearly a million dollars for such enterprises and they are still hard at work. In China, they are helping to combat cholera and blindness, which are prevalent, and a similar campaign is in progress in Algeria, Northern Africa. Activities of the Junior Red Cross stretch from Poland to Palestine.

RETURNING TO SENSIBLE THERAPEUTICS

In the Medical Record, May 22, 1920, C. A. Price says:

"In these days of new and accepted theories, we may have gained something worth holding, but it is very certain that we have drifted far away from more good remedies than we have found in the substitutes that we have been trying to push into recognition.

"We should know that the theoretical formula from the laboratory, and this, that or the other specific, may be good, but can never be depended upon as a cureall. These remedies will be affected in their action by influences operating on the patient.

"I should dislike to be ridiculed as a faith-healer, or a Christian Scientist, for I am a very big believer in drug action when properly prescribed, but I am going to run the risk and tell my readers that I have very little faith in drug action upon any human being who does not think my remedies are going to do him good. But we are not talking about faith alone as a remedy, but of the actual faith that the experienced doctor has in articles of the materia medica, based upon his sufficient experience that amounts to actual knowledge.

"It looks to us like a return to reason and sound therapy, when we see our journals carrying articles from such

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splendid and experienced practitioners as Dr. Beverley Robinson of New York, in which he introduces our old friends mutton suet with benzoin, epson salts and glycerine locally, and pinches of cubebs for sore throats, with local applications of tr. iron and glycerine. W. R. D. Blackwood of Philadelphia is another man who can take a few common remedies and do more with them than any man I ever knew. It is because he has learned by experience what he can do with drugs when using them as indicated. He has faith in his drugs and in himself, and he knows what he can do. W. T. Marrs of Peoria, Ill., is also a man who can think and observe and he has common sense enough to be guided by his experience. He is not ashamed of using a little suts. turpentine, camphorated oil, glycerine or sage tea, and he is psychologist enough to make almost any combination work. A. J. Jameson, M.D., of Sentinel Butte, N. Dakota, has an excellent article along these same lines in the *Medical Summary*, of Philadelphia, in which he tells us so many things we can do with echinacea, and mentions his successes in treating infections and preventing same. These physicians and others like them are drug healers of the highest order, and are men who think and observe and attach importance to their experiences. We have all strayed after new things and improvements and have left too many good and tried remedies behind until they are forgotten, and as many know we have become to an extent tacit, if not active, acknowledgers of therapeutic nihilism—a fatal attitude toward any step or progress in the healing art."

Perhaps if there were more real thinkers like Brice—men who have applied drugs and other remedies, and no matter how homely, and who have profited by their experience—we might have greater faith in ourselves as doctors, and maybe we would not be chasing after false therapeutic agents, to meet with disappointment. In our enthusiam over prevention we have so far forgotten the things curative as to have become rather poor doctors, as a whole, for we have not known our therapeutics. There has been too much chasing after the ends of rainbows, or those newer and "modern" agents which have been offered us by legion. Perhaps it might have been a good thing had coal-tar never been known.

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Mixed Vaccines

THE VITAL STATISTICS OF THE ARMY, as well as agglutinin and bactericidal experiments, have established.

FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B", but that it does protect against Typhoid.

SECOND.—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B".

THIRD.—That vaccination against Paratyphoid "B" likewise protects against that infection only.

FOURTH.—That vaccination against all three infections does definitely protect against all three.

FIFTH.—That the protection conferred **and the results of agglutination** tests, **are identically the same whether the individual is immunized against each organism separately** or **whether the vaccines are given in combination.**

SIXTH.—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration?

Paracelsus, Harvey, Jenner, Pasteur, all were men of "the open mind". They broke down the barriers set by authority in their times, and it seems to us a sad return to old traditions to insist that only those things which have the seal of official, or quasi-official, approval may ethically be included in the physician's armamentarium.

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